THE NEW LAW COURTS.

MR. C. BENTINCK, in the House of Commons, in prefacing a question that stood upon the paper in his name upon the subject of the new design for the Courts of Justice, said that on the 21st ult. he had asked the Chancellor of the Exchequer whether her Majesty's Government approved the designs which were stated to have been accepted, and that the right hon. gentleman had stated that he did not approve those designs. He understood that during the vacation certain alterations had been made in these designs, and wished now to ask the right hon. gentleman whether that were the case; and, if so, whether he would consent to exhibit the altered plans in the library of the House of Commons, or elsewhere within the precincts of the Palace of Westminster, for the inspection of members of that House.

The Chancellor of the Exchequer replied that, although the plans had been exhibited in the library of the House for several weeks during last session, the House could not be brought to pronounce an opinion upon them. Under these circumstances he did not know what good purpose could be derived from exhibiting them again, especially as the works were now proceeding under them.

Mr. C. Bentinck gave notice that he should call attention to this subject on a future day, and move a resolution in reference to it.

THE REBUILDING OF GLOBE BRIDGE, AT PECKHAM.

THE Vestry of the parish of St. Giles, Camberwell, have, within the last two or three weeks, been receiving fresh tenders for the intended new bridge at Peckham, to carry the Commercial-road, Peckham, over the Grand Surrey Canal; and at the meeting of the vestry, last week, the tenders, eight in number, were opened, when it appeared that they varied in amount from 3,350*l.* to 2,500*l.*, the lowest two being that of Mr. J. Brown, of Disan-road, New Cross, 2,610*l.*; and that of Messrs. Peach, Brothers, Loddon, Norfolk, 2,500*l.* The vestry decided to accept the tender of Messrs. Peach, Brothers, subject to the approval of the sureties, and in the event of their not being satisfactory, that the tender of Mr. Brown be accepted, with a like proviso. The present bridge is only 12 ft. wide, and quite inadequate to accommodate the existing traffic. The new structure, which has been designed by Mr. James Dredge, of Buckingham-street, Adelphi, will be constructed of wrought-iron arched girders, resting on brick abutments. The span will be 27 ft. 4 in. and the width of the roadway the same as that of the approaches on the other side, namely, 40 ft.

IRRIGATION IN SOUTHERN INDIA.

INSTITUTION OF CIVIL ENGINEERS.

AT a recent meeting, the paper read was "On the Value of Water, and its Storage and Distribution in Southern India," by Mr. George Gordon, giving an account of the ancient native and the modern systems, under the two heads of tank and channel irrigation. The value of water to the cultivator was shown, first, by contrasting the yield of dry crops with that of rice and sugar-cane, from actual experiments. From these it appeared that the net profit per acre on dry crops was 8s. 2½d.; on rice, 4*l.* 16s. 10½d.; and on sugar-cane, 18*l.* 6s. 6d. In the two last cases, a very low rate for the water was assumed, viz.: 12s. per acre for each crop of rice, and 24s. per acre for each crop of sugar-cane, as provisionally paid by Government. A comparison between dry crops and rice, and dry crops occasionally flooded, was then made, based on the average price of grain extending over five years, and deducting one-fourth from the gross value of the crop in the case of dry crops, and one-sixth in the case of wet crops, to cover loss in bad years. Without deducting the water-rate, the difference in the net value of the crops was as follows:—Between dry crops and rice, taking the most unfavourable comparison, 25s. 7d.; between dry crops and the same occasionally irrigated, 30s. 8d.; and between two dry crops and sugar-cane (which occupied ten months of the year), 8*l.* 2s. 8d. But if water was stored, so as to allow a second crop of rice to be grown, the advantages were nearly doubled. The author then showed that, provided a water-rate proportioned to the value of the water was fixed, irrigation would benefit the cultivator to the extent of 8s. 6d., or 50 per cent., and yield a gross return on the outlay of 14s. 9d. per acre; and if water were stored for a second crop, the gain to the cultivator would be 19s. 9d., or more than 100 per cent., and the return to the agency supplying the water 37s. 3d. per acre, the cultivator not having to expend any capital in improvements. Of the 37s. 3d. per acre profit, 22s. 6d. was about the sum due to the storage of water, supposing such storage works to be added to distribution works already constructed. It was shown that the cost of large works of irrigation might be safely reckoned at 7*l.* per acre on an average, or 8*l.* 15s. if 5 per cent. on one-half the capital for ten years during construction were added. If the profits made by the application of the water were divided, in the proportion of one-third to the cultivator and two-thirds to the agency supplying the water, works of channel irrigation would benefit the cultivator, as above stated, to the extent of 50 per cent., and yield a net return of 7·4 per cent. on the capital expended. With respect to the cost of tanks, the author gave some figures to show that the construction of flat country tanks of the second class, or even of the third class, would offer a very doubtful return, although in some cases it might pay the cultivators to construct them. Great profits had been made by Government in several cases by restoring or repairing tanks and also channels which had become ruined; such net profits amounting to from 10 per cent. to 45 per cent., and in one instance, which was cited, to 250 per cent. The construction of large storage reservoirs would, the author considered, return a very large percentage on the outlay.

WHERE DOES THE MUD COME FROM?

SIR,—Will you allow me to suggest through your columns that this is a question which may well engage the attention of those who have the charge of our thoroughfares; for if the following theory be correct, our tempers as well as our pockets are likely to be sorely tried, owing to the general road-repairs that will before long have to be undertaken throughout London?

I do not apply the question to macadamised roads, but to those that are covered with blocks of granite, as also to the footways. It does not seem to me so much a case of granite *versus* asphalte as that of bad workmanship in regard to the laying of the former; for a somewhat close attention to the matter has convinced me that by far the greater part of the mud that has been of late daily carted away consists of the very subsoil on which the granite blocks and pavement rest, and which, owing to the ill-laying of the stones and the badness in quality of the material used for binding them together, naturally, after a lengthened period of wet weather, becomes thoroughly saturated, and finds its way to the surface. If this be so, what can we otherwise expect than during a continuance of fine weather to find our streets sinking in all directions, owing to this displacement as well as contraction of the remaining soil? There can be no question that during the late bad weather asphalte has fairly maintained its ground in public estimation, both as regards cleanliness and safety,—for footways especially,—and that bad workmanship will have to answer for all the miseries that have yet been endured and are still in store for us. The finest piece of granite road-laying in London is to be seen on the Holborn Viaduct and in the adjacent streets, and their extreme freedom from dirt during the late trying weather, as compared with other parts of the City also placed under the charge of street orderlies, is sufficient proof of what might be done, if only there were the will, to remove from London the reproach that attaches to it from the neglected state of its thoroughfares.

G. C. E.

THE NEW ST. JAMES'S HOTEL, DERBY.

THE new St. James's Hotel, erected by the St. James's Hotel Company (Limited), and situated in the Corn Market and St. James's-street, Derby, has been opened to the general public.

The hotel contains on the attic floor thirty-two bedrooms, and on the second floor about the same number, with two sitting-rooms, bath-rooms, and all requisite accommodation. On the first floor, facing the street, is a large room, which is proposed to be used as a ladies' coffee-room; there is a bath-room, &c., adjoining. A corridor leads to a good-sized dining-room, and four other private sitting-rooms. On the landing are first-class private sitting and bed rooms. At the back, but leading from the principal staircase, is an assembly-room (to be called the St. James's Hall); attached is a serving-room, and on the same floor are stock or show rooms. On the ground-floor is a spacious entrance, leading from St. James's-street, with a coffee-room on the right-hand side, and on the other side is another large room for commercial gentlemen, with a luggage-room and offices adjoining. In front is the bar, with still-room and smoking-room. The principal entrances are provided from the Corn Market and St. James's-street, with access through an outer hall, covered with an ornamental iron and glass roof, which is to be fitted up and used as a lounge. The manager's room is central, and the bar commands a view of all the entrances. Speaking-tubes and bells communicate from the managing department to all parts of the premises. The inner halls are paved with encaustic tiles. The staircase is close to all the entrances, but not in the way of any, being in an inner hall. It is of stone to the first floor, and continued the same size to the attics, with iron scrollwork in the place of balusters, and mahogany handrail. On the first landing is a broad mirror, from the floor to the ceiling, facing the first flight of stairs. On the newel post at the bottom is a large figure in bronze supporting a clock. A hydraulic lift is placed between the kitchen and manager's room, and works from the basement to the attics. The kitchen, servants' hall, and working offices are spacious, and fitted up effectively. The back or kitchen court is covered with a glass and wood roof. The basement is divided into cellars under all the hotel. Housemaids' closets, with hot and cold water and soft water, are provided on each floor. Attached to the hotel also is to be provided a luncheon-bar or restaurant, with lounge, smoking and billiard rooms, and necessary offices. Spirit vaults adjoin the gateway to the stables.

The architects for this pile of buildings are Messrs. Giles & Brookhouse, Derby; and the builder is Mr. Dusautoy.

LEAKY SEWERS.

IT is obvious that if the sewer inquired about by "B. A.," in the *Builder* for February 24th, although built in only 4½-inch brickwork, be laid in soil only "*rather damp*" no leakage ought to take place; but if the 2-feet barrel-drain be laid entirely, or even partially, below the water level in the land, and consequently always exposed to water, it is impossible to say what quantity of water might percolate through such a slight thickness of brickwork. A great deal would depend upon the description of bricks used and the length of the sewer. If there were any junctions prepared for future extensions, but not at present made effectually water-tight, a still larger quantity of water might enter than was due to the percolation through the brickwork of the sewer.

Q. E. D.

ECONOMY IN THE LEAMINGTON KITCHEN RANGE.

IN recording my treatment of this range, it may be well to say a few words about its construction and usual action. With a very small fireplace, it has to heat water, a large oven, and a hot-plate for cooking; the bottom of the grate is double, reducing still more the apparent space for fuel. The upper (or real) bearing bars are framed together and stand separately about 1½ in. or 2 in. over the lower bars. When the half-door of the fire is shut, the draught is intense, and as I have heard it said "you can burn away any quantity of coal you please," it is very difficult to restrict your servant to the use of coke.

In practice, as may be supposed, the fire is very apt to go out suddenly; and not only so, but the false bottom soon wants renewing, and you also find that the range must be disused once a year or oftener, to replace a burnt-out burr.

Having had my full share of all these drawbacks in a grate, of which I admit the general excellence, it occurred to me that by putting a solid 2-inch burr in the place of the false bottom, I should check the excessive draught, and retain much general heat. This has completely answered, and during three years no burr has yet had to be renewed. The fire is much more enduring, and we can allow some

coal to be occasionally added to the coke without grumbling; there is no want of heat, for we have had to caution our servant against overheating the plate.

I have been told that in Birmingham it is not an uncommon practice to mould some tempered fire-clay into the bottom of ordinary fireplaces, and I would admit this to be an improvement upon the sheet-iron, and of course a step in the right direction. Allow me to add in reference to my former letter, that the poker should be made a little more pointed than is usual.

G.

THE TRADES MOVEMENT.

Ipswich.—A meeting of the master builders has been held to consider a circular received from the committee of workmen formed on the previous week, asking for the concession of the nine-hours system. After some discussion, it was unanimously resolved not to accede to the request of the men, as it was considered prejudicial both to the workmen and to the public.

Wolverhampton.—Nine years ago, after a series of ruinous strikes in the building trade at Wolverhampton, both masters and men resolved to refer their differences for the future to Mr. Rupert Kettle. An arbitration board was appointed, and has existed in the trade ever since. The last agreement between masters and men was come to after arbitration had endured for four years, and the men, thinking that the time had come for a change, in the direction of the nine-hours system, gave notice to arbitrate the point, and a meeting of the board of arbitration was fixed to be held for legislation upon the subject. Mr. Burkitt, the secretary of the board, gave the usual notices to the different branches embraced in the movement; and the arbitrator, Mr. Kettle, together with certain of the masters and men, were present in the Quarter Sessions Court of the Town-hall, the use of which had been lent for the purpose by the mayor of the borough. It was then found that Mr. Lovatt, one of the principal employers, could not attend; and it further transpired that the notice to the bricklayers, though it had been left at their club-house, had not been called for, and that, therefore, the bricklayers were unrepresented. These causes combined to make an adjournment of the conference necessary. Before, however, the adjournment took place, some conversation ensued, in which the very great benefits that had resulted from arbitration in the Wolverhampton building trades were admitted by masters and men alike; and Mr. Kettle said that, in all his experience of arbitration, he had never known a case in which the men had not abided by the rules in the utmost possible good faith.

Walsall.—At a meeting of the operative carpenters and joiners, it was unanimously resolved to request the employers to concede the nine-hours system. It was also resolved that the wages for day-work should be 6½d. per hour, and that overtime should be paid time and a half; and that during the winter season the men employed on buildings should be paid the same as those employed in the workshop.

Deddington.—A meeting of more than thirty of the principal *employés* of Messrs. Franklin, builders, has been held, to discuss the hours of labour on a Saturday, which have hitherto been from six a.m. until five p.m., the *employés* feeling somewhat aggrieved that their time for cessation of labour is not at one o'clock on a Saturday, similarly to most of the large firms in Oxford and Banbury. After considerable discussion it was unanimously agreed that a deputation wait upon Messrs. Franklin, and urge them to agree to close their establishment like their neighbours, and this without any deduction on account of wages. It has since been understood that Messrs. Franklin have proposed that their *employés* working out of the town may leave off work on Saturdays at one o'clock, and those in the town at three o'clock, to commence the first Saturday in May. Messrs. Franklin's *employés* had a meeting, and consented to Messrs. Franklin's proposal.

Wednesbury.—Messrs. Stevenson & Son, painters, decorators, &c., have made an unsolicited offer to the workmen in their employ of an advance of 2s. per week in their rate of wages, and a reduction in the hours of labour, viz., to leave work at two o'clock on Saturday, instead of four, to commence on the 1st of April. The offer was accepted.

Gloucester.—The United Trades' Committee of Masons, Bricklayers, Carpenters, Plasterers, and Labourers have addressed a circular to the master builders and contractors of Gloucester and its vicinity, requesting them to adopt the nine-hour day's work, receiving the same amount of wages now received for sixty hours; and that this concession come into force on the first Monday in April in the present year.

Edinburgh.—The plasterers' labourers of Edinburgh came out on strike, owing to the refusal of their employers to grant their demand of 2s. per week on their pay. The strike is general in the city so far as the labourers are concerned; and the master plasterers, who explain that only ten weeks ago they voluntarily advanced the labourers' wages 2s. weekly, and that now a similar advance is asked, are apparently determined not to give way. The late advance spoken of by the masters raised the rate of the labourers' wages, for thirty-nine hours' work, to 1*l.* weekly—the skilled labour of the plasterers for the same time being paid at 1*l.* 2s. 9d.

Glasgow.—A great strike lately appeared imminent in the ship-building and engineering trades on the Clyde. A mass meeting of the workmen, at which from 10,000 to 12,000 were present, had been held, to consider the terms of compromise offered by the masters, namely, a reduction of the working hours to fifty-four per week, and an increase of wages to the extent of 5 per cent. Delegates from the various establishments reported that, except in one case, the men had decided to reject the terms offered by the masters, and ultimately the meeting resolved, all but unanimously, to adhere to the original demand for a reduction of hours to fifty-one per week, with an increase in the rate of wages. The men employed at one of the shipbuilding establishments had already gone out on strike, when the masters came to an arrangement with the men, virtually agreeing to the nine-hours system.

Wantage.—The first really useful advantage of the nine-hour day's work seems to have been taken at Wantage. The adoption of the nine hours in this town by Messrs. Gibbons, and at Challow by Messrs. Nalder, has given their numerous *employés* much spare time; hence the necessity of establishing classes by which improvement of the mind may be obtained, has been taken into consideration. The town-hall has been completely filled with a most attentive audience, composed for the most part of mechanics and artizans, to hear a lecture by Mr. Buckmaster, who insisted that scientific knowledge was indispensable to the artizan and mechanic in pursuit of their respective callings. The lecturer illustrated some of the more abstruse parts of his lecture by diagrams and by humorous conversations which he had had with those who considered themselves perfectly masters of their work. Classes will be formed as soon as the necessary arrangements can be made.

A NEAT INSCRIPTION.

The chancel of Whittingham Church, Northumberland, lately rebuilt from the designs of Mr. F. R. Wilson, is now adorned with the following inscription by Lord Ravensworth, incised upon a brass plate:—

Cancellum
Hujus veteris ecclesiæ
Pietate majorum extructum
Recentiori manu infeliciter reparatum
Henricus Thomas Baro de Ravensworth
In honorem DEI
Sumptibus suis restituendum curavit
A.D. MDCCCLXXI.

SCHOOL PLANS: LONDON SCHOOL BOARD.

The sub-committee on school plans state in their report that the best number for a class is 30, and that the number ought in no case to exceed 40. The schools (except the infant school) should be arranged or graded according to the Government standards.

When a section in any school belonging to one standard numbers sixty children it may be conveniently divided into two classes, for each of which a class-room should be provided, but so that the two class-rooms may be thrown into one for the use of the whole section collectively when required, care being taken that the partition between the two rooms be such as to exclude or sufficiently to deaden in each room the sound from the other. In graded schools the area of the class-rooms should be calculated at nine square feet per scholar. The total area for general school and class-rooms together should be on the scale of ten square feet per scholar. The gallery in the general school-room should be constructed for two-thirds of the whole number of scholars. In any group intended for fewer than 1,000 children, the senior schools for boys and girls separately would be too small. Therefore, in groups intended for less than 1,000, the departments should be three only,—infants', boys', and girls'. The majority of the committee suggest that in a group of schools intended for 1,000 or more there should be four departments—namely, infants, junior mixed, senior boys, and senior girls. After illustrating the principle of division recommended, the committee suggest plans for the arrangement of infant schools, adding that the area of the general school-room and of the class-rooms together in infant schools should contain in all cases not less than nine square feet per scholar. In all the graded schools of the Board, that is, in all besides the infant schools, there should be for each separate school department a general school-room, the area of which is calculated on the scale of four square feet for every scholar, and four class-rooms in two pairs, one pair for the use of each section or standard, and each pair capable of being thrown into one room—the area of each class-room to be calculated on the scale of nine square feet for every scholar in the class, and the number in each class to be 30, 35, or 40, according to the numerical unit adopted for the school department.

PROFESSIONAL CHARGES.

Sir,—The Conference Committee on Professional Charges have issued a proof schedule of charges, containing certain suggested modifications in the R.I.B.A. scale published in 1862.

As it is the wish of the committee to avail themselves of the opinion of architects generally before preparing the schedule for presentation at the next Conference, will you allow me, through the medium of your journal, to inform those architects who are not members of the Institute, the Association, or other professional societies (who will receive copies through their own societies) that on application here a copy of the schedule will be sent to them.

J. Douglass Mathews, Acting Secretary.

9, *Conduit-street.*

ST. PAUL'S.

The attempt at illuminating the dome of St. Paul's on Tuesday was a failure, as usual; and, in order to prevent failures on future occasions, it would be as well to try experiments at once, so as to be prepared for such occasions; and the experiment I would propose would be to place a powerful electric light in the topmost story of each of the west towers, and on the summit of the dome of St. Paul's School reflecting upon the dome. Additional lights, if necessary and effectual, might be placed on the turrets of St. Austin's, Christ's Church, and St. Mary Magdalen's, Fish-street, all directed towards the same object.

W. S.

THE PUGIN TRAVELLING STUDENTSHIP.

From the six candidates who submitted drawings and testimonials in competition for the Pugin Travelling Studentship of 1872, the Council of the Institute have elected Mr. John Sulman, of Ashburton-road, Addiscombe, subject to the usual conditions prescribed in the Pugin deed of trust.

The drawings of Mr. Edwin J. Munt were considered next in order of merit, and deserving of honourable mention.

LIGHTNING DISCHARGES.

Sir,—In an article, inserted in the *Builder* (No. 1512), read at a meeting of the Manchester Literary and Philosophical Society, on the above subject, in accounting for the occasionally destructive effect of lightning in buildings supposed to be protected by lightning-conductors, the following passage occurs:—"It is not surprising that atmospheric electricity, of a tension sufficient to strike through a stratum of air several hundred yards thick, should find an easier path to the earth by leaping through a few feet of air or stone to a great system of gas and water mains, extending in large towns for miles, than by the short line of metal extended in the ground which forms the usual termination of a lightning-conductor." This statement is a plausible method of accounting for some of the disasters which have occurred from lightning discharges, when considered in conjunction with some of the accompanying circumstances, in observed cases. We cannot dispute facts. But it may be asked, How about the element of time? for electricity, quickly as it travels, takes time to do so. If the conductor has been *of sufficient capacity* in the upper part of its length to receive and convey the electric fluid, without injury to the building, why should we suppose that it should, for any reason whatever, leave the conductor, already conveying it, in order to strike through "a few feet of air or stone." Unless, indeed, the electric fluid be supposed, if we may so speak, to have a preconscious knowledge of the comparatively greater difficulty of its course, if it continue its passage along the conductor. The writer scarcely considers that any supposed previous electric condition, by induction or otherwise, of "the water and gas

mains" affords a sufficient reply to the objection here brought forward, so long as the conductor is, from its material and size, of *sufficient capacity* to convey the current.

The practical value of the suggestions made by the writer of the paper in question, I do not at all wish to dispute. W. S.

SCHOOL BOARDS.

Bridgwater.—The School Board have received estimates for the proposed new schools at Eastover from builders who had been invited to furnish them. The highest estimate amounted to 2,500*l.*, the next figure was 1,700*l.*, and the other estimates amounted to 1,580*l.*, 1,350*l.*, 1,320*l.*, and 1,280*l.* respectively. The plans were examined in detail, but the consideration of them was adjourned.

Caterham, Surrey.—Mr. Richard Martin, of Caterham, has been appointed architect to the Caterham School Board.

CHURCH-BUILDING NEWS.

Leeds.—The Church of St. Luke, Beeston-hill, has been consecrated. This new structure has been erected from the designs of Messrs. Adams & Kelly, of Leeds. It is built of stone. The style adopted is the Gothic of the thirteenth century. There is a clearstoried nave, with north and south aisles, a chancel with aisle on the north side, and organ-chamber and vestry on the other side. The foundations have been laid for a tower and spire. The windows of the aisles are coupled, and have lancet heads; those in the clearstory have traceried heads; the east window is a five-light one, with tracery, and is filled in with stained glass, the gift of Mrs. Beacock; and at the west end there are three-light windows, with a triple light surmounting. The roof of the nave is open to the apex. Interiorly, the total length of the church is 110 ft. 6 in., the width is 47 ft. 6 in., and the height from floor to ridge is 52 ft. The seats are free and unappropriated, and afford accommodation to 700. The total cost has been 3,180*l.* Messrs. Weatherley & Rymer, of York, were the contractors.

East Claydon.—The church at East Claydon, which has for years been in a state of dilapidation and ruin, has been restored, as a mark of respect to the rector of the parish. The church has undergone a transformation, both externally and internally; the only eyesore now being the tower, but this, it is hoped, the inhabitants themselves will, before long, place in a state of decent repair. A new carved oak porch replaces a very unpretending erection of brick and plaster, which comprised both the porch and vestry. The walls have been almost entirely restored, being copied as nearly as possible from the old. The parapet is new, and is of Dulton stone; all the old dressings have been restored, assimilating to the old. The earth has been lowered to the original foundation line, and an underdrain has been inserted to keep the foundation dry. The cost of restoring the body of the church has been borne by the subscriptions to the testimonial fund; and the chancel by Sir H. Verney, bart., M.P. One window on the north side of the chancel was perfect, and the others were copied from it. The east window is new; is copied from the old one, and is the gift of the Rev. W. F. Fremantle; it is said this window will, at some future time, be fitted with stained glass. The roof has been raised 2 ft. 6 in., in order to place the windows in their former position, and has been restored with new oak panelling, and moulded and carved rails. The floor has been raised to its former level, and paved with Godwin's encaustic tiles. A sedilia has been formed in the south window of the sanctuary, and a credence in the north; the latter the architect has designed from two stones found embodied in the walls. The new prayer-desk is from a design by Mr. G. G. Scott. The doorway formerly existing in the west end of the north wall is re-used for the door leading to the vestry, which forms the eastern end of the north aisle. The roof is entirely of oak, of the Decorated period, with moulded beams, carved braces, and moulded rafters. The seats are entirely of wainscot. The roof of the nave has been raised 2 ft., to clear it from the windows. The arch has been restored in its own material. All the windows and internal dressings have been restored with stone to match the old. The original level of the floor, which is paved with black and red tiles, has been retained. The whole of the interior of the tower, as far as the belfry floor, has been restored with new doors, new glazing, and new belfry floor on stone corbels. In the chapel there remains a portion of the church, evidently of a much earlier period than any other part of the building. The work has been under the superintendence of Mr. Hannaford; the builders were Messrs. Mansfield & Booth, Buckingham. The sum subscribed for the purpose of restoration is about 1,700*l.*

Sutton Coldfield.—Measures are now being taken for the restoration and enlargement of this church; plans for the purpose having been prepared by Mr. Thomason, architect, Birmingham. The church very much needs the proposed restoration. It consists of tower, nave, north and south aisles, and chancel, with two side chapels, built by Bishop Vesey, the great benefactor of Sutton. At present the tower (blocked off from the nave) is used as a vestry; heavy galleries disfigure the edifice; and the body of the church and the galleries are filled with high square pews—of the densest Georgian type,—so constructed as to occupy the largest possible space, and to afford the least possible room for the congregation. These pews ought to give accommodation to 790 persons; but, from their awkwardness of arrangement, they do not give sitting space for more than 450 persons. It is proposed to remodel the galleries, to add a second north aisle and vestry, to open the tower into the body of the church (so as to serve for an entrance and a baptistery), and to replace the pews throughout by open seats. In this way accommodation will be made for a total of about 1,000*l.* The cost of the intended improvements will be 2,500*l.*, of which about 1,100*l.* are already offered.

Langport.—A public meeting has been held in furtherance of the restoration of St. Mary's Church, Huish Episcopi. The chair was taken by Capt. Stuckey. It was agreed to confine the renovation to the body of the church, the holders of the rectorial tithes being liable for the repairs of the chancel. A new roof will be required to the south transept, and that of the north, which is out of order, requires considerable repairs. A new vestry is also needed, the present room being almost useless, the fire which occurred a short time since having nearly destroyed it. To carry out this work of reparation, it was considered that 1,200*l.* would be required; and it was resolved that the landowners and inhabitants should be at once appealed to for assistance. The chairman announced that nearly 800*l.* had already been promised. A report on the state of the structure, and the work necessary to be done for its complete restoration, prepared some time ago by Mr. B. Ferrey, F.S.A., the diocesan architect, was read, and it was agreed that his assistance should be again sought, in order that specifications for the work might be immediately prepared.

Woodstock.—The church of St. Mary, Glympton, has been reopened, after considerable improvements, both in the church and chancel, under the superintendence of Mr. Street. The expense has been chiefly defrayed by Mr. H. Barnett, M.P., the patron of the living, and by the Rev. C. W. M. Bartholomew, the rector, aided by contributions. Four new windows, of Geometrical character, replace the very plain openings which had lighted the church, and a new roof has been placed on the chancel, and crosses on the east end both of the nave and of the chancel. A porch and vestry have also been built. A new altar has been presented. Plain stalls for the choir have been provided, and the chancel throughout has been laid with encaustic tiles. The east window, presented by the family in memory of the late George Henry Barnett, of Glympton Park, is of stained glass, by Clayton & Bell, representing the Crucifixion in the central light, and portions of our Lord's history, in connexion with the Virgin Mary, to whom the church is dedicated, in the side lights, with our Lord in glory in the apex.

Southampton.—The restoration of St. Michael's Church is now being pushed forward with all possible haste, the committee being in hopes that the work which they contemplate executing at present may be completed by Easter in order for the church to be then re-opened. The roofs of the aisles have been strengthened, and the whole of the pews and galleries removed; the aisles will be open from end to end, and not blocked up so much as formerly. The old roundabout staircase to the belfry and tower, which previously occupied so much room, has been done away with, and a circular one substituted, and placed in a much more advantageous position. The flooring of the church will not be quite so high as formerly, the original level being taken, and the seats are to be open and, according to the plans, capitally arranged, while the alterations will give a better view from the interior of the east window and the altar. The work is being executed by Mr. H. I. Saunders, builder, of London.

Hanley Castle.—The chief stone of a new church has been laid here. The new edifice is to be a Chapel of Ease for the parish of Hanley, and has been in course of erection since the month of November last. The sole cost of the church has been undertaken by Mr. Samuel Martin, of Catterall, in the parish of Hanley Castle, and formerly of Liverpool, and the expense of the work is estimated at 5,000*l.* The site of the edifice is near to the Hanley-road, on land given by Sir E. A. H. Lechmere, bart. The old school church is situate at a distance of half a mile from the new church, and it has long been found to be quite inadequate to accommodate all who wished to attend the service. The new church is to be dedicated to St. Gabriel. The architect is Mr. George Gilbert Scott, and the builder is Mr. Wm. Porter, of Malvern Wells; Mr. Jas. Burlison is clerk of the works. The new edifice will be in the Pointed Gothic style of architecture, and will consist of body, tower, and spire, with nave and aisles. It is being built of Cradley stone, with Bath stone dressings, lined with brick. The walls are supported with stone buttresses. The tower is on the north-east side of the church. The entrances are on the west and north-west, and there is another entrance on the east side of the tower to the vestry and belfry, which will be constructed to accommodate a peal of six bells. The east window will have five lights, filled in with tracery. The windows in the aisles are double-lighted, with simple Gothic tracery in the head, and above them, in the clearstory, there will be placed cinquefoil lights. The roof will be steep, and covered with slate. An ornamental cross will be fixed on the east and west points of the ridge. The spire and tower will consist of three stories, and the total height of tower and spire will be 124 ft. In the interior there will be an open roof composed of stained deal. The church is divided into nave, aisles, and chancels. The seats will be open, with sloping backs, and made of pitch pine. The memorial stone is in the base of the north-east pier of the chancel arch. The floor will be of deal, upon oak sleepers; but the aisles will be laid with encaustic tiles. The church will be heated with hot air. The building, it is expected, will be completed before the close of the present year. It is distant about two miles and a half from Malvern Wells. It is to accommodate 420 persons.

Penn.—The parish church of Penn, says the *Wolverhampton Chronicle*, has been re-opened, after being closed some months for restoration, enlargement, and beautification. In the way of enlargement there were difficulties, owing to the want of space, the site being hemmed in by roads, the only plan available being to build eastward. Even this was attended with difficulty, as well as expense, as the ground rose rapidly close behind the old chancel. A sufficient quantity of ground having, however, been cleared, the old chancel was removed, and the new work substituted consists of two new bays added to the nave, nearly doubling its length, and affording accommodation for about 150, and an entirely new chancel and chancel aisle, the dimensions of the chancel being 32 ft. long by 16 ft. wide. The material employed is Bromsgrove stone, and the interior walls of the chancel and chancel aisle are lined with stone from the same quarry. The roof is open timbered, and executed in pitch pine; and the floor of the chancel is laid with encaustic tiles, from Lugwardine. The prayer-desks, and the seats for the choir (in the chancel) are new, carried out in oak, carved, and some seats for children, placed in the chancel aisle, are of pitch pine. The pulpit has been transposed from the north to the south side, where it has been fixed on a stone base. The chancel is separated from the chancel aisle by an arcade of three ornamented arches, and it is approached by four steps from the nave, the altar space being elevated four steps above the floor of the chancel. The east window of the old chancel, which was filled with stained glass, at the expense of the late Mr. W. H. Sparrow, has been erected in the chancel aisle, and in its place now appears a window of five lights, filled with painted glass, the gift of the same gentleman's daughters, as a memorial of their father. Mr. Preedy, of London, supplied the window.

One of the principal ornaments of the chancel is a reredos, the gift of Miss Sparrow, and executed in alabaster (partly found in the church in the course of the excavation) by Bell & Allmand, of London, according to designs by the architect. The reredos is inlaid with glass mosaic work, the centre tablet representing the cross, and the tablets on either side corn and the vine (typical of the bread and wine), and the emblems of the evangelists. Miss Sparrow has also presented a brass lectern (by Hardman, of Birmingham), and an iron screen, which separates the chancel from the chancel aisle. The altar-rail, also of ornamental ironwork, is the gift of Mrs. Mapleton, wife of a former curate of the parish. At the east end of the north aisle provision is made for a new organ, which is in course of building by Walker, of London. The church will in future be warmed by a new apparatus by Blakemore, of Wednesbury, introduced in substitution for stoves. In addition to the entirely new part of the work, the old portion of the church has been put in good repair. The whole has been re-floored, the roof has been boarded and felted, to correspond with the new roof, and re-tiled, and in a niche over the doorway of the south aisle a figure has been placed of St. Bartholomew, to whom the church is dedicated. Mr. Paley, of Lancaster, brother of the vicar, was the architect, and the contractors were Messrs. G. & F. Higham, of Wolverhampton. The outlay was about 3,000*l.*, of which 400*l.* were deficient on the day of the re-opening.

Gedling.—The parish church has been re-opened. This old freestone structure has been renovated and restored. The roof was dilapidated, the plaster and whitewash which had been daubed over the sedilia, piscina, and arches were water-stained, the walls were bulging in and out, the woodwork was grimy, and the whole interior was damp, dirty, and gloomy. The lofty steeple is among the very few in England which bulge out in the middle. The zig-zag walls which had for years been getting more and more out of the perpendicular, have been put into line, the stone scraped and made to bear some relation to the quarry from which it had been brought, the flooring has been restored, new modern seats have been supplied, and a light and cheerful look has been imparted where a gloomy and depressing aspect before existed. New open seats and chairs are substituted for the old ones, and one of Whittaker & Constantine's new convoluted stoves has been placed beneath the floor. In the chancel, Mr. Forester, the rector, has, at considerable expenditure, carried out his plans of restoration completely. The freestone, sedilia, and piscina, with their mouldings and arches, have been cleared of the repeated coatings of limewash, and restored to their original appearance; and the same may be said of the walls and windows. The floor within the altar-rails has been laid with tesselated tiles from Broseley, of a pattern which presents a quiet and sober combination of colours. An entirely new roof has replaced the old one at its original pitch, and the ceiling is an azure, or deep sky-blue, on which the sun, the moon, the planets, and various constellations are depicted in gold or some suitable colours.

DISSENTING CHURCH-BUILDING NEWS.

Tunbridge Wells.—The Congregational church has been reopened for divine worship, after having been closed about three months, during which alterations and improvements have been made. The architect was Mr. Pertwell, of Chelmsford, and the contractors Messrs. Strange & Sons, of Tunbridge Wells. The contract was taken for 875*l.*; but, in addition to what was originally contemplated, it has been found necessary to execute some repairs. The repewing (the benches being stained and varnished), the lighting, the ventilation, and the heating, together with a renovation of the whole of the interior, have been carried out. The old platform has given way to a new one. A new organ will be shortly erected by Messrs. Beddington, of Soho, at the cost of 240*l.*

Alvaston.—The Wesleyan New Chapel, the building of which was commenced in August last year, has been opened for divine worship. The edifice has been erected on land belonging to the trustees in front of the old chapel, a portion of which was taken down to increase the size of the new building. The old chapel is now used as a Sunday-school. The new chapel is a Gothic building, 45 ft. long by 24 ft. wide on the exterior; the height from the ground level to the apex of the gable being 27 ft. The external elevations of the chapel and porch are of pressed red bricks from Spondon, relieved with Coxbench stone-dressings to the windows, doors, gables, and buttresses. The roof is covered with Bangor slates, with ornamental ridge tiles. The main timbers of the roof being exposed, are wrought, stained, and varnished, with white plaster ceiling, and the walls are stuccoed and lined in imitation of stonework. The chapel is heated by one of Johnson's patent Gill stoves fixed underground, with circulating air-flues, procured from the Derwent Foundry, Derby. The seats, which are stained and varnished, are all uniform in design, of the bench style, with reclining backs and stall-ends. The chapel is seated for about 160 persons. The pulpit is of pitch pine and deal. The space for the communion is raised above the level of the main floor, and has a moulded railing, supported by light cast-iron balusters, painted blue, picked out with gold, not a vermilion, and enclosing a marble communion-table.

Brighouse.—Bailiffe Bridge, situated about midway between Lightcliffe on the west, Wike on the east, and Brighouse on the south, has been left with scanty accommodation for religious service. The Methodist New Connexion proposed to put up a new chapel. The ground has been purchased at a cost of about 80*l.*, and the new building is from plans by Mr. J. W. Helliwell, of Brighouse, architect. The edifice is to seat about 400, and the estimated cost is about 800*l.* The building will include schools and other necessary accommodation.

Frodsham.—The foundation-stone of a new Wesleyan Chapel has been laid at Frodsham. Mr. Thomas Hazlehurst had offered to build a new chapel at his own expense. This offer was accepted by the Frodsham Wesleyans, and Mr. Charles Hazlehurst, a brother of the donor of the chapel, gave them a piece of land in Warrington-road for a site. According to the designs, furnished by Mr. C. O. Ellison, of Liverpool, the chapel will be Gothic, but treated after the French style of architecture, and built of the white stone of the district. In the front there will be a doorway in the centre, with polished granite shafts, and moulded and carved arch, with a five-light window above, nearly filling the front gable. At each side there will be five double windows, with traceried heads, and at one corner a tower and spire, 120 ft. high, with lights and projecting pinnacles, each of the latter having polished granite shafts. Inside, the roof and ceiling are to be entirely of pitch-pine, and iron columns will support the galleries and roof. These columns will have capitals of hammered iron. The principals are to be of moulded pitch-pine, with carvings at the intersections. There will be a gallery on three sides of the chapel, and at the pulpit end will be the orchestra, with pine and ornamental glass screen. The whole of the woodwork will be pitch-pine, and the ends of the open stalls will be carved. It is intended to fill the whole of the windows with stained glass. The chapel inside is 56 ft. long by 44 ft. wide, and will seat 600 persons. The height of the ceiling is 36 ft. above which there will be a ventilating chamber the full length of the chapel, with ornamental perforations in the ceiling. Heat will be supplied by means of hot air. In addition to the chapel there will be a lecture-room at one side of the chapel, 35 ft. by 24 ft., and four vestries. The estimated cost of the work is about 6,000*l.* The builders are Messrs. White & Son, of Runcorn. The approach to the chapel will be laid out with shrubs and trees. It is also the intention of the Wesleyans to build a house adjoining the chapel for the accommodation of their minister, at a cost of from 800*l.* to 1,000*l.*

Hull.—A new Primitive Methodist Chapel is immediately to be commenced in Williamson-street, Hedon-road, Hull. The ground-plan contains the chapel, 85 ft. by 55 ft.; main school-room, 50 ft. by 30 ft.; two infants' schools; and a kitchen, each 24 ft. by 14 ft. The plan of the first floor shows the gallery in the chapel, which takes the entire round of the building. At the back of the chapel and above the school buildings are shown thirteen large class-rooms. The seating in the chapel will all be curved and struck from one centre. The gallery fronts will be light and elegant in design, being white and gold, and supplied with ornamental cast-iron work, backed with crimson cloth. The whole of the buildings, with the exception of the kitchen, will be heated with hot water in lieu of fires. The style of architecture adopted is Italian; the estimated cost being 4,000*l.*, exclusive of heating apparatus. The architect engaged is Mr. Frank N. Pettingell, of Hull and London.

Stainland.—The various works in connexion with the erection of the new Congregational chapel at Holywell-green, have been let by tender;—Masons' work, to Messrs. Benjamin Edwards & Son, Holywell-green; joiners' work, Mr. Joseph Hodgson, Holywell-green; slaters' Hill & Nelson, Batley; plaster work, Messrs. Bancroft & Son, Halifax; plumbers' work, Mr. Joseph Aspinall, Eland; glaziers' work, Mr. J. Boer, Leeds; painters' work, Messrs. E. & B. Briggs, Low Moor; ironwork and gasfitting, Mr. J. M. Dovey, Manchester; granite and marble, Messrs. G. & J. Fenning, London; carving, Messrs. Walker & Emley, Gateshead; warming apparatus, Mr. J. W. Lewis, Newcastle-on-Tyne. The total amount of the tenders is about 6,000*l.* The foundations are already in. The total cost will be defrayed by Messrs. John Shaw & Sons, Brookroyd Mills, Holywell-green. The tower, with its spire, rising to the height of 120 ft., will be seen for miles round. The design comprises:—nave, 74 ft. by 28 ft. 6 in.; aisles, 58 ft. 6 in. by 10 ft. 3 in.; choir, 18 ft. by 14 ft. 3 in.; two vestries in the rear, and two porches in front, formed by the tower on one side, and the staircase on the other. The present accommodation is designed for 600; but with the addition of transepts, for which the building is arranged, 400 more sittings can be provided. The pulpit will be of Caen stone. The windows will be glazed with cathedral tinted glass; the lobbies and margins will be paved with mosaic tiles.

Masbro'.—The corner-stone of a new Wesleyan Reform Chapel and School-room has been laid at Masbro'. The building, which will be in the plain Italian style of architecture, and calculated to seat about 400 persons, will be finished, it is expected, by the 1st of May next. On the basement floor will be a school-room 11 ft. in height, above which will be the chapel. The whole building will be surrounded by walls and iron fencing. The chapel will be 20 ft. high in the interior, and instead of the usual pulpit a platform will be constructed. The whole of the works connected with the erection of the building will, it is estimated, entail an outlay of 800*l.* The architect is Mr. John Dodd, of Masbro'; the contractors for the joiners' and masons' work being Mr. Charles Ripley and Mr. Gardiner respectively.

SCHOOL-BUILDING NEWS.

Stoke-next-Guildford.—This school, which is situated at Bell-fields, and which has been in course of erection for the last six months, is opened. The structure consists of a school-room, 52 ft. by 20 ft., a class-room, 20 ft. by 16 ft., and a small open porch, from which the school and class rooms are entered. The materials employed are yellow stock bricks, relieved with bands and dressings of red and black bricks. The arches over the doors and windows are also in red and black. At the west end is a small gable with two openings in it, in one of which is hung the bell. The roof is covered with plain and ornamental tiles, in bands of red and dark tiles alternately. The schoolroom is lighted by a large three-light window at each end, and by seven two-light windows. Above the end windows are smaller ones, opening with lines and pulleys for ventilation, which is also secured by numerous gratings at the floor level. The school and class rooms are warmed by open fires, the stoves and chimney-pieces being bold, but plain. In the class-room is a gallery for the infants, and the school-room is fitted with desks, which by a mechanical arrangement may be converted into seats with backs for use at lectures, &c. The school will accommodate about 170 children. In the rear of the main building are the closets, fitted with Moule's patent earth apparatus. The works have been carried out by Messrs. Swayne & Sons, builders, of Guildford, Mr. Edward Ward Lower being the architect. The amount of contract, we understand, was about 630*l.*, which included fittings.

Nell Gwyn's House at Highgate an Hospital.—A medical contemporary reports that a convalescent hospital in connexion with St. Bartholomew's, is to be erected at Highgate, and that the old mansion in which Nell Gwyn lived, situated behind the St. Pancras Infirmary, and opposite to the Highgate branch of the hospital for sick children, has been presented to the hospital, and will be fitted up to accommodate forty or fifty patients.

VARIORUM.

THE *Leisure Hour* informs the learned Edinburgh Professor who objected to Addison's creation hymn, "The spacious firmament on high," because it taught errors in science, that a new set of nursery rhymes are prepared, of which we give two specimen stanzas :—

> "Twinkle, twinkle, solar star,
> Now we've found out what you are,
> When unto the noonday sky,
> We the spectroscope apply;"

and,—

> "Little Jack Horner, of Latin no scorner,
> In the second declension did spy,
> How of nouns there are some
> That ending in 'um"
> Do not form the plural in 'i.'"

These are as good as the couplet of Tennyson in its improved form :—

> "Every moment dies a man,
> Every moment one is born;"

which must be thus written in order to bring the language into strict consistency with statistical science :—

> "Every moment dies a man,
> And one, one-sixteenth is born."

——The new number of the *British Workman* (with two remarkably good engravings) reprints an interesting and suggestive story from Holmes's "Kind Words to all Classes," called "Ben Starkie's Strike for Less Wage and More Time."——"The Nation's Wave of Suspense in 1871" (Houlston) gives in a tabular form a record of the critical illness of the Prince of Wales, with a conspectus of the bulletins issued by the physicians in attendance, and notices of contemporary and connected events.——Lockwood & Co. are about to publish a new "Quarterly" under the title of "Naval Science,"—a magazine intended to promote the improvement of naval architecture, marine engineering, steam navigation, and seamanship. It will be edited by Mr. E. J. Reed, C.B., the late Chief Constructor of the Navy.——The *Garden* speaks thus of the "rockwork" at the eastern end of the Serpentine :—"Not long ago the site of this was an ordinary steep bank shaded by trees, with an objectionable and watery hollow at its base. It was resolved to improve it by covering it with an extensive 'rockwork.' It is difficult to give an idea of what this is like, but numbers of our readers may have an opportunity of seeing it for themselves. Suppose a cottager, in some part of the country where cottagers display grotesque taste in their usually pretty little gardens, to be owner of a few barrowfuls of the rubbish of burnt bricks, clinkers, &c., and to make of these and a little mortar a flat shapeless mass on the ground, with a hole in the middle to act as a sort of vase. Suppose the whole surface of the large bank in the park to be covered with a gigantic and hideous plaster of this kind, and a roundish hole here and there left to be filled with earth for the reception of plants, and the reader who has not an opportunity of seeing this scene will have some idea of what it is. We should hesitate to describe it were it not under the eye of everybody, as people might naturally conceive it incredible that such a course should be pursued in a public park on which vast sums of money are spent."——The *Daily Telegraph*, in a leading article devoted to Sir Christopher Wren, thus comments on the small amount of interest in him displayed by his countrymen :—

"The critics are still in a rage because there are not extant more Shakspearian autographs and more copies of the first folio, hundreds of which were probably burnt in the vaults under St. Paul's, used by the booksellers for ware-rooms,—because it has not yet been discovered why the poet bequeathed to his wife only the 'second-best bed' in his house, and because it has not been made clear what he did when he first went to London, and whether he did or did not take refuge in the metropolis to escape a quarter-sessions prosecution for stealing Sir Thomas Lucy's deer. There is no such anxiety among the countrymen of Sir Christopher Wren to ascertain what manner of man he may have been, what was the habit in which he lived, what were his likings and dislikings. That he was the King's surveyor-general of works, a fellow of the Royal Society, a distinguished Freemason; that only a scandalously meagre pittance was allowed him as architect and superintendent of buildings in St. Paul's Cathedral; that from the beginning to the end of his undertaking he was shamefully baffled and bullied by Boards of Commissioners and Cathedral Chapters, and was at last turned out of his employment to make room for an incompetent plasterer, are circumstances of which most cultivated persons have a more or less vague idea. As to Sir Christopher in the flesh, a casual acquaintance with the print-shop windows, or the pages of illustrated dictionaries and books of biography, may remind us that he was a portly gentleman, wearing a high periwig. But there were many portly gentlemen in periwigs during the Caroline period; and, casually glancing at his effigy, the architect of St. Paul's might very fairly pass muster for Sir William Davenant or Sir John Denham, for the French poet, Boileau, or for Villiers, Duke of Buckingham. Nollekens, the sculptor, used to tell a story of an ingenious print-seller in Soho, who, during the 'No Popery' agitation preceding the riots of 1780, furbished up an old plate of Sir Christopher, had another name engraved at the base, and sold the copies as portraits of Titus Oates, there being a great demand for pictures of the 'Protestant Martyr' just then among the serious classes. Altogether, the great Constructor has been allowed to linger, so far as his individuality is concerned, in obscurity as complete as that which envelopes the private life of the famous grammarian, Lindley Murray, of whom the most that is known is that he was a valetudinarian American gentleman, who lived for five-and-thirty years on the ground-floor of a cottage near York, subsisting entirely on boiled mutton and turnips, and delivering interminable discourses on philology to young ladies in training to become governesses."

Miscellanea.

Collapse of the Australian Meat Preserving Companies.—Just as the demand for Australian cooked meat is being established in this country among the workhouses and the poor, there is risk of a failure in the supply. The establishment four years ago of meat preserving in Australia proved most advantageous to the pastoral and agricultural interests. Not only has the price of stock been arrested in its downward tendency, but the value of fat sheep and cattle, notwithstanding the large increase in their numbers, has improved to the extent of at least 25 per cent., a 60 lb. sheep being worth 2s. and a fat bullock 2*l.* more than in 1867, when the Melbourne Company first commenced operations. The present partial collapse of this important interest, the prospective winding up of some companies, and the temporarily suspended operations of others, are matters therefore of national importance. The principal cause of this wide-spread failure appears to have been that too many companies have been started. There are at the present time, or at any rate there were lately, twenty-six meat-preserving establishments at work in the various Australian colonies; Victoria having ten, Queensland seven, New Zealand five, New South Wales two, and South Australia two. Prejudices are not overcome in a few months, and notwithstanding the efforts of energetic persons interested in extending the demand for Australian preserved meats, there is still a very wide-spread prepossession amongst Englishmen and Scotsmen in favour of seeing and knowing what it is they are eating. In the case of several companies the whole of their available means were swallowed up in the expense of building. Thus the Australian, with a paid-up capital of 10,015*l.*, spent upon premises no less than 10,983*l.*; and the Victoria, with 10,830*l.*, contrived, notwithstanding the protests of the manager, to sink upon bricks and mortar no less a sum than 9,544*l.* Half a dozen companies might have succeeded where a large number have broken down. Strenuous efforts should be made to combat the prejudices against preserved meat in England.

The Metropolis Water Act.—The new Metropolis Water Act, providing for a constant supply, has come into operation, and it is now to be the duty of the water companies to see that every house is properly provided with fittings, and to enforce the conditions which will be sanctioned by the Secretary of State. The penalties for defective fittings are decisive, for not only is the defaulter liable to a fine of 5*l.*, but the companies have power to cease the supply of water, and to report him to the nuisance authorities. If the provisions of the Act are not complied with as regards fittings, misuse of water, and undue consumption of it, the company supplying the water, without prejudice to any remedy against the defaulter, may cut off the service and cease to supply water so long as the injury remains, or is not remedied; and in every case of so cutting off or ceasing to supply, the company shall within twenty-four hours thereafter give to the nuisance authority, as defined by the Sanitary Act, 1866, notice thereof; and if the fittings are not repaired within the prescribed time, the house shall be a nuisance within the meaning of the 11th section and sections 12 to 19 inclusive, of the Nuisance Removal Act, 1855, and shall be deemed as unfit for human habitation.

The City Markets.—At its last meeting the Court of Common Council resumed the discussion on the proposition to enlarge the Smithfield Market, by the erection of a new building on the vacant site at the western end of the present structure. It was resolved, after a long debate, to adopt the recommendation of the Markets Committee in favour of providing further accommodation.

Newspaper Press Fund.—At the annual general meeting of the Newspaper Press Fund on the 24th ult., the report referred to the adoption of a new rule of the society, under which they are empowered to make grants to deserving members of the press not members of the fund, to an extent not exceeding 10 per cent. of the average annual amount of the donations in the preceding years. The grants by way of relief within the year amounted to 403*l.* 1s. 6d., the number of cases being twenty-five, of which four were applications under the new rule. Fifty new members have been elected during the year, the roll now comprising 262 members, of whom 178 are resident in London, and 84 in the provinces. The invested capital of the fund now amounts to 6,200*l.* The alteration in the rules should be an additional incentive to the public to assist in maintaining the prosperity of the fund. The retiring members of the committee, Messrs. C. V. Boys, H. Corbet, H. Findon, J. M. Le Sage, and C. Shaw, were re-elected. Mr. M'Rea, Mr. Goring, and Mr. Mackenzie were added to the committee; and the treasurer, Mr. Hyde Clarke; and the auditors, Messrs. D. M. Evans, W. Gladding, and C. R. Saunders, were re-elected.

Adulteration of Food and Drink.—A Bill has been introduced into the House of Commons by Mr. Muntz for the suppression of adulteration. It provides for the appointment of analysts in London by the City Commissioners of Sewers and the vestries and district boards; in the country by the Courts of Quarter Sessions and town councils. Inspectors of nuisances and other officers appointed by the local authorities may procure articles suspected to be adulterated and submit them to the public analyst, and upon obtaining a certificate from him stating that the articles are adulterated, may obtain a summons against the seller or adulterator. The penalty for adulterating articles of food, or drink, or drugs is to be for the first offence a fine not exceeding 50*l.* and costs, and for a second offence imprisonment with hard labour for not more than six months. The penalty for selling adulterated articles is 20*l.* with costs, and after a second offence the magistrates may cause the offender's name and address to be published at his own expense in such way as may seem to them desirable. The expenses of executing the Act are to be paid out of the local rates. It is to be hoped the new analysts will be of more use than those appointed under a previous Act of Parliament.

New Public Halls, Glasgow.—There being some apprehension that a scheme which is to give to Glasgow a new suite of halls would require to be abandoned, a number of the leading townsmen, headed by the Lord Provost, have come forward, and at a cost of 28,500*l.*, purchased the ground. It is proposed to abandon the Tontine and Insurance principle, at first adopted, and to proceed at once with the westerly portion of the building, which will in itself be complete, consisting of a great assembly and banqueting room in connexion with suites of smaller apartments. This hall will be so arranged as to be available as a Chamber Concert-room, capable of accommodating an audience of about 1,000. The proprietors of the ground will retain for five years, in the interests of the Public Hall Company, now to be newly organised, the portion necessary for a great Philharmonic Hall, which may at any time within that period be erected. Meanwhile, the present shareholders will be asked to retain the shares already taken up, so as to enable the scheme to be at once proceeded with.

Sanitary Condition of Dover.—The Local Government Board sent down an inspector to inquire into the sewage of the town; but it now appears that, the Town Council having complained about the Government outfalls here, the military authorities in turn found fault with the sewers of the corporation, and the investigation was held in consequence. The result of the inquiry has been to show that both the town and the military outfalls are in not quite as good a state as could be wished, and doubtless those of the garrison are much worse than the others; but fortunately the evils complained of have not been sufficiently serious to affect the health of the soldiers or the people.

St. Bridget's Church, Wavertree, Liverpool.—This church, which was designed by Mr. C. A. Heffer, architect, was opened on Tuesday, the 27th ult. A full description of it, with illustrations, will be found in our volume for last year, p. 544.

A Hale Old Labourer.—The *Preston Herald* says,—"There is now living in Preston, and working hard every day, a man whose like is not to be met with every day, named Frank Bradley. He was born at Drumbeg, in Ireland, in 1776, and is consequently ninety-six years old! Notwithstanding his advanced age, Bradley, as intimated, still works hard, and during the present week he might have been seen at the mill of Messrs. Leese, of Fylde-road, mounting a long ladder, and going three or four stories high with a hodful of bricks on his shoulder! He was twenty-two years old when the Irish Rebellion of last century took place. After serving in the army for fifty-four years, he has earned his livelihood as a bricklayer's labourer. Bradley is hale and hearty, has nearly all his teeth, has lost none of the hair of his head, and looks likely to live for years.

Illegal Projections.—Dr. Appleton, in the St. George's, Hanover-square, Vestry, moved, "that a return be prepared of the several cases of illegal projections made since the passing of the Metropolis Local Management Act, in which this Vestry has taken proceedings for the purpose of giving effect to the law, and of the costs incurred by so doing; and that a copy of the same be forwarded to the Metropolitan Board of Works, and their special attention be called to the large amount of money which the Vestry has expended in these proceedings, and the very unsatisfactory results, in order, if possible, to obtain more energetic action in such cases from their officers, or an alteration of the law to enable the Metropolitan Board of Works themselves to prosecute for neglect or defiance of their authority." The motion was carried unanimously.

The New Park at Stepney.—The contractors of the Metropolitan Board are now engaged in converting Stepney-green, which is situated in the heart of the most crowded quarters of the east of London, into a public recreation-ground. It had fallen into a neglected condition, and its inclosure and adornment having become the subject of discussion at the Local Board, the Mile-end Vestry, an appeal was made to the Metropolitan Board. After a brief delay, the Metropolitan Board consented to contribute the whole cost,—about 3,000*l.*,—of converting the fields into flower-gardens and recreation-ground. The lord of the manor of Stebunheathe has granted Stepney-green for the free and perpetual use of the people, and, except in regard to the expenditure for inclosure and culture, this open space has been secured to the public without cost.

The Workmen at the Law Courts.—Messrs. Dove, the contractors for the foundations of the new Law Courts, provided their workmen, over 200 in number, the best opportunity of remembering Thanksgiving Day, by supplying them with a good dinner,—a substantial mode of practical thanksgiving which we hope has had many imitators. A large tent had been erected on the ground, and at two o'clock an array of roast and boiled joints of the best quality, with vegetables and beer in abundance, followed by plum-pudding, jellies, and creams, were displayed before the British navvy, to which he did ample justice. An announcement that the day's holiday would not involve the loss of the day's pay was, as might be expected, appreciated.

The Thames Embankment.—Mr. Gladstone having stated that the sum proposed to be paid to the Government by the tenants at Whitehall, in consideration of their giving up their claim to the piece of vacant ground reclaimed was wholly inadequate to its value, Mr. W. H. Smith gave notice, amid cheers from both sides of the House, that he would, on the earliest possible day, again bring the subject under the notice of the House and submit a resolution. The motion he proposed to submit on the subject would be in this form,—"That in the opinion of this House it is the duty of her Majesty's Government to take the necessary steps to give effect to the recommendations of the Thames Embankment Committee of 1871."

American Cars for English Tramways. The Lobdell Car-wheel Company, of Wilmington, Delaware, has shipped for New York seventy-six car-wheels to George Starbuck & Co., a large manufacturer of cars in Birkenhead. They are to be placed on cars to run on London tramways. This is the second shipment by this company to England.

The New Railway and Station Works from Loughborough-road to the Crystal Palace.—A new branch railway, together with a special station, is about to be constructed from the Loughborough-road station of the London, Chatham, and Dover Line to the High Level Line of that company's line near Denmark-hill, for the purpose of reducing the distance between Ludgate-hill and the Crystal Palace, and avoiding the detour and change of carriages at Brixton. The new line involves the destruction of much valuable property in the neighbourhood. Within the last few days the works on the new line have been commenced, by taking down a considerable number of houses and shops in Flaxman-road, near Coldharbour-lane.

Fall of a Warehouse in Maidstone.—A large warehouse, situated in St. Faith-street, had been let to a maltster, for storing grain, of which a considerable quantity was delivered, a large proportion of it loose. The building, however, seems not to have been sufficiently substantial for the purpose, for the front wall bulged out, and fell across the street, the floorings gave way, and the contents of the warehouse, mixed with bricks, planks, and rubbish, were scattered over the roadway. The loss will be very considerable, not only to the owner of the building, but to the proprietor of the grain.

Brickdust in Mortar.—With reference to a paragraph in your last as to brickdust mixed with lime and sand being used in Cuba and the Spanish dominions, I would say that forty or fifty years ago it was extensively used in this part of the kingdom (Hull), and was called "simmon," or, as I think, in one of your early volumes, by the French name "*ciment*." It was mixed with mortar for fence-walls, &c., and with lime and hair for outside plastering, repairing roofs, and chimneys. Cement has superseded it for plastering and walling, and black (or furnace) sand or blacksmith's ashes for pointing and repairing.—A Bricklayer.

New Coal Depot at Wandsworth.—In addition to the large and extensive coal depôt which the Midland Railway Company recently erected and opened at Walworth, adjoining the London, Chatham, and Dover Company, they are now about to construct a similar establishment, adjoining the Wandsworth-road Station of the last-named company, and for that purpose they have just purchased ten acres of land, on which the intended depôt is to be erected. The establishment at Walworth is one of the largest in the metropolis; but that about to be built at Wandsworth will be on a still more extensive scale.

A New Monster Line of Steamships.—It appears from advices just received from America that a new company (the Randal Steamer Company) has just been formed in New York, with a capital of 12,000,000 dollars, to build six steamers on a large scale, to run between Liverpool and New York in a much shorter time than is at present occupied by the steamships of the Inman and Cunard companies, and it is stated that the new line will have a mail subsidy from the United States Government. The tonnage of each vessel will be 8,000 tons.

Liverpool New Southern Hospital.—An official statement appears to the effect that of the 45,000*l.* required for the new hospital 32,000*l.* have already been contributed, leaving a balance of 13,000*l.* yet required to complete the work. To realise this amount the committee propose, by permission of the Liverpool Town Council, to hold a grand fancy fair and flower show in Sefton Park, during Whitsun week. The foundation-stone of the new building was laid on October 23rd, 1867, by the late Earl of Derby, and the early completion of the work is only delayed by the want of the remaining funds.

A Speculation. — It seems that when the College Wynd at Edinburgh was recently demolished under the powers of the City Improvement Trust, all the oak found in the houses that were pulled down was bought by one person. His object was to manufacture the wood into souvenirs of Sir Walter Scott. This, it seems, has been done, and in many of the shops in the city card-trays, paper-knives, and other articles, have made their appearance, bearing to be made of "Wood from Birthplace of Sir Walter Scott, College Wynd, Edinburgh." The *Scotsman* says they are tastefully made.

Tillage by Steam.—Spring is coming on, and the companies who, in different districts throughout the country, undertake tillage by steam, are preparing for another season of activity. The existence of these companies, the large amount of capital which they represent, to say nothing of their dividends, are satisfactory evidence that mechanical appliances driven by steam can be used with profit in the cultivation of the land. Ploughs of the present day would amaze a farmer of the last generation, particularly that ingenious implement which makes four furrows at once, and that other which digs or grubs as may be required.

First Walk of the Oxford Architectural Society.—The first walk this term has taken place, when Magdalen College was visited. The members and their friends, upwards of 150 in number, and among whom were many ladies, met, shortly after two o'clock, in the Hall, where they were received by Mr. Henderson, the vice-president. The Rev. Dr. Millard, vicar of Basingstoke, who was formerly one of the secretaries of the Society, accompanied the party over the College, after addressing them in the Hall.

State-Room to Prevent Sea Sickness.—Amongst the luxurious fittings of the White Star Company's steamer *Baltic* is a revolving state-room, which is said to be effectual as a preventive against sea sickness. This room is situated almost midships, and close to the bottom of the chief companion way, and is fitted upon "points" in such a manner that, no matter how the vessel rolls or pitches, those in their berths are always on a level. We should, think, however, that it cannot prevent upward and downward movement.

The East London Tabernacle.—This large building for religious purposes in the East of London has been opened for the use of the Baptist congregation under the pastorate of the Rev. A. G. Brown. The new Tabernacle, which will provide sitting accommodation for 3,000 persons, has been erected in Burdett-road, Bow, at a cost of about 12,000*l.* The frontage is nearly 114 ft. in length; the height, 60 ft., with a turret at each end; and the depth, 83 ft. The basement contains a school, or lecture-hall, 92 ft. by 64 ft., with class-rooms.

Park-lane Sewer.—It has been unexpectedly discovered that there is a second sewer in Park-lane, 5 in. or 6 in. above the basement of Gloucester House. It is stated that, although the newly-discovered sewer had been stopped up at both ends as unfit for use, houses still drain into it, and the sewage oozes into the house in question.

Value of City Land.—Two freehold houses were sold by auction, at the Mart, Tokenhouse-yard, last week, part of the estate of the late Mr. Edward Loseby. They had a frontage of 53 ft. to Bush-lane, Cannon-street, and of 44 ft. to Cross-lane, embraced 2,900 square feet of land, and were sold for 10,250*l.*, to Alderman Truscott.

Engraving by Jets of Sand.—Mr. Morse, of the United States, now obtains fine effects, it is said, by simply allowing corrundum or emery to fall through a tube of the length of 8 ft. on to the prepared surface. By this very singular means all the exposed parts of the glass or silver plate are etched in the most perfect manner.

Sweeping the Pavements. — The Camberwell Vestry have considered a proposition in favour of sweeping the footpaths at the public cost. It was objected that the expense would be too great, and that the ratepayers would not be willing to pay Ultimately the motion was rejected.

TENDERS

For additions to Sudbury Hall, near Harrow, to adapt it for a Girls' Industrial Home, for Mr. Williams. Messrs. Habershon & Brock, architects:—

Scrivener & White	£3,163	0	0
Perry & Co.	3,159	0	0
Carter & Son	2,981	0	0
Wood	2,937	0	0
Newman & Mann	2,915	0	
Manley & Rogers	2,757	0	0
Haynes	2,597	0	0

For building ten cottages, rear of Angel-road, Lower Edmonton, for Mr. Raynham. Mr. T. J. Hill, architect:—

Fairhead	£2,195	0	0
Bayes & Ramage	1,997	0	0
Ward	1,889	0	0
Childs	1,850	0	0
Linzell	1,493	0	0
Rist & Brown	1,490	0	0

For the erection of an oak palisade fencing, at the new cemetery, Charlton, for the Charlton Burial Board:—

Wood	£318	15	3
Stiff	301	16	0
Bowen	292	8	0
Langton	292	8	0
Fetham	287	5	5
Hill & Son	280	4	0
Woodcock	271	15	0
Tucker	268	9	2
Richardson	252	3	5
Marshall (accepted)	238	13	6
Pett	206	4	0

For building two villa residences, at Enfield. Mr. T. J. Hill, architect:—

Ward	£993	0	0
Bayes & Ramage	978	0	0
Patman	949	0	0
Fairhead	895	0	0
Childs	812	0	0
Rist & Brown	575	0	0

For additions and alterations to Brunswick Cottage, Upper Sydenham. Mr. C. F. Jones, architect:—

Pawley	£457	0	0
Staines & Son	438	0	0
Sawyer	347	0	0

For bricklayers', tilers', plasterers', and other works, for proposed house at Caterham. Mr. R. Martin, architect. Quantities supplied by Mr. F. Sparrow:—

Hunter	£842	0	0

For carpenters' and joiners' work, at same house:—

Baker	£429	0	0
Scrivener	412	0	0
Bridgman, Nuthall, & West	383	0	0
Simons	367	0	0

For the sewering of Malpas:—

Lee	£1,059	0	0
Carlisle	938	6	3
Coker, Jun.	840	2	9
Huxley	825	0	0
Walker	813	0	0
Bugbria	799	0	0
Heaps (accepted)	729	17	5

For part rebuilding and alterations, for Messrs. Dawson, Brothers, City-road. Mr. James Harrison, architect:—

Ennor	£1,130	0	0
Little	1,129	0	0
Henshaw	1,120	0	0
Pask	1,065	0	0
Browne & Robinson	1,065	0	0

For the erection of three six-room dwelling-houses, Crown-street, Brighton, for Mr. J. D. Bradley. Mr. W. W. Elldridge, architect. Quantities supplied:—

Barnes	£685	0	0
Blackmore & Howard	675	0	0
Holloway & Son	620	0	0
Lockyer	550	0	0
Reynolds	465	0	0

For redressing the fronts of Nos. 130 to 170 (even numbers only), Marylebone-road, including new party fence, and front fence walls, &c., to Nos. 174 to 204 (even numbers only), Marylebone-road, for Lord Portman:—

Simpson & Son	£3,680	0	0
Browne & Robinson	3,580	0	0
Brown	3,300	0	0
Phillips & Son	3,295	0	0
Harris & Sons	3,118	0	0
Bird	2,984	0	0
Longmire & Burge	2,870	0	0

TO CORRESPONDENTS.

Subscriber (there are such tables in Trantwine's "Civil Engineer's Pocket Book," noticed recently in our pages).—J. H.—F. M.—W. G. S.—J. T. R. G.—Practical Engineer.—B. & H.—L. & N.—D. L.—A. F.—J. W.—T. J. H.—F. S.—B. F.—T. P. W.—A. W. M.—S. & Son.—R. B. W.—H. A. R.—J. H.—T. & C.—Mr. F.—Mr. L.—D. & Son.—T. H.—G. R.—A Subscriber.—J. L.—Gault.—J. P.—W. G.—F. M.

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NINTH BONUS MEETING, January 4th, 1872.

The following are Extracts from the Reports of the Directors:—

1.—Progress of the Society in the Bonus Period.

"1° AS TO INCOME:

The NEW ASSURANCES were 2,150 in number, for an aggregate sum of 1,356,303*l.* at premiums amounting to 44,664*l.* per annum,—results which, viewed in relation to the depressed condition of Life Assurance during much of the period, cannot be regarded as other than satisfactory.

The YEARLY REVENUE was increased by over 21,000*l.* per annum, and reached 236,563*l.* on the 30th June, 1871.

The INTEREST yielded by the whole of the Funds, whether invested or uninvested, was 4*l.* 5*s.* per cent. on the average of the entire period, being fully 3*s.* per cent. more than that realised in the previous period. This increase was obtained not only without loss, but without the smallest impairment of security.

2° AS TO OUTGOINGS:

The claims which accrued by the death of 795 persons, assured by 977 Policies, amounted to 646,481*l.*

The mortality was very favourable to the Society, the payments having been below those estimated by fully 85,000*l.* and the deaths which occasioned them fewer by 92 than the number expected.

The EXPENSES incurred in conducting the business, always moderate and well within the provision made for them in the premiums, were fractionally less than in the previous period, and fell below 7½ per cent. on the Revenue.

It is thus seen that side by side with uniform success in the transactions of the Quinquennium, there was continuous growth in the resources and magnitude of the Society, which consequently stood, at the closing of the books, on a broader basis than at any former time."

2.—Financial Position of the Society on June 30th, 1871.

"The subsisting Assurances on the 30th June were 8,679 in number, assuring, with their Bonus additions, the sum of 5,445,928*l.*

The Assurance Fund at the date of Valuation was	£1,826,458	10	9
And the total calculated Liability	1,477,179	17	3
Leaving a Surplus of	£349,278	13	6

Deducting therefrom the permanent Reserve Fund of 50,000*l.* pursuant to Sec. 32 of the Society's Special Act of Parliament, there remains to represent the profit of the 5 years the large sum of 299,278*l.* 13*s.* 6*d.* an amount equal to 26 per cent. of the total Revenue from all sources during the 5 years, and exceeding by 59,831*l.* 6*s.* 5*d.* the surplus of any previous Quinquennium.

This Surplus is matter for hearty and unmixed congratulation, and justifies the preference shown by the Board for a well-selected business tending to profit. It must, however, be remembered that although owing in the main to ordinarily recurring causes, and to sources of profit having every prospect of permanence, it is, nevertheless, certain that its unprecedented enlargement is due to a condition of mortality favourable beyond previous experience, to be probably compensated under the law of averages by an increase of deaths hereafter, beyond those allowed for in the calculations.

Deeming it prudent to provide for such a contingency, the Directors have, under the advice of their Actuary, set aside the sum of 25,000*l.* for this purpose. Of the remaining 274,278*l.* 13*s.* 6*d.* they now recommend the division of 220,000*l.* a sum greater by 33,000*l.* than any previously divided, and sufficient to give to the Shareholders 9*l.* a share, and to the assured the largest bonus ever allotted to them."

3.—Results of the Division.

"Of the sum now to be divided, five-sixths, or 225,000*l.* will fall to the Assured, and will produce a reversionary addition to the Policies of 323,871*l.*

This Reversionary Bonus will average 49 per cent. or vary according to age from 34 to 89 per cent. on the Premiums received in the Quinquennium on all the Policies amongst which it will be distributed.

The Cash Bonus, which is the present value of the Reversionary Bonus, and therefore the true measure of the allotment, will average 29 per cent. on the like payments, as against 28 per cent. at the last Division, and 28 per cent. in 1862, which was the highest previous per-centage. No comment can illustrate better than this comparison the merits of the present Division."

The next DIVISION of PROFITS will take place in JANUARY, 1877, and Persons who effect New Policies before the end of June next will be entitled at that Division to one year's additional share of Profits over later Entrants.

The Report above mentioned, a detailed account of the proceedings of the Bonus Meeting, the returns made to the Board of Trade, and every information may be obtained of

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VOL. XXX.—No. 1518.

The Thanksgiving Illuminations and the Fine Art in them.

IF old King Ludd, if ever such a personage had existence, and ever moved about in this world, could but have risen from his grave on the night of the Thanksgiving Day to see the crowd and witness the confusion in the place called after him, he would never have got over his surprise. No such crowd certainly was ever before seen on Ludgate-hill, and no such sight ever presented itself to the vision of men, from King Ludd to Christopher Wren, or from his day to the "Thanksgiving" day itself. We live in very practical and mechanical times; so much so indeed, that but for an accident we should never have had this imposing show of people and strange things on Ludgate-hill to talk about; and if therefore it be only for variety's sake we would say a few words on what is to be got or learnt from it in an artistic point of view. But first a word or two on the character generally of these kinds of display, so exceptional as they are. Unfortunately all that is done or even attempted would seem to be but little else than a matter of passing business merely; so no one, we can but conclude, ever properly and seriously considered what to do in the way of "illumination" or in the temporary house decoration of a day. No one, we may presume, ever thought of such a thing as producing an artistic work, or ever thought for a moment of calling in the aid of some *artist* "illuminator." We do not seem to have arrived in any way at that degree of "civilisation" which would impress on the world the startling fact that it is always necessary to employ some one to do a thing. Nothing comes into being of itself; there must always be an active personal agent in the work, whatever it be, whether merely temporary and for the passing hour, or to last for ever, or for as long as the material itself will hold together. This may seem but a mere truism to many, but it is a principle to be borne in mind and well worth remembering, for the fact really is, that no one in the late show knew what to do *himself*, and yet, strange to say, no one seems to have thought it necessary to go out of his house to find the right man to do it for him. Do not let us be misunderstood. Of course there was, as there always is, the usual resource,—the *shop* and *counter* to go to. There were flag-shops, and red cloth warehouses, and gasfitters in abundance, and plenty of stock in hand for the work; but where, we may ask, was the man or men, the *artists* who were to mould all this material, abundant as it was, into shape? What, for example, was a man to do with a whole cartload of flags of all shapes and sizes, from one but little bigger than a pocket-handkerchief, to one pretty nearly as large as the front of the house before which it hung? No man along the whole route from end to end knew what to do with his fine flags; and when the place did happen to be appropriate, it did not seem to occur to any one that when a number were used there would needs be room for some power of selection and choice, and that one device must be better and more appropriate than another, and that, so to speak, an *idea* might have been shadowed forth by the said flags. This was somewhat curiously exemplified in the flag display on the top of Montague House, Whitehall, on the tall French roofs of which there were no less than sixteen of these large fine-coloured flags, of all colours and patterns,—stripes, crosses, union-jacks, and all,—but the whole showy display was simply meaningless and without any significance, nor was it in any way related to the noble owner of the mansion. Surely there must be in such a place and surroundings "banners" with a meaning enough, and the noble duke might have displayed to the wondering modern Londoner the armorial bearings of his house, and the successive additions to it, and, in short, the heraldic history of his family might have been shown; for to do such a work at all in such a place, and with means so ample, it was surely worth while to do it well and intelligibly, if possible! It was possible to do it, but it was not done, for there was evidently no man to do it, or even to attempt it; for it all came, as usual, from over the counter, and from nowhere else! In passing, we may notice a pretty flag arrangement at Gwydyr House, with stars and Prince of Wales feathers in crystal, as it is termed, which to see at its best it was necessary to stay out rather late, till the show was over, and to look at it in the dark, for these crystals look best and most gem-like by *reflected* light. It was a pretty enough display, and must have cost a little thought. We have said thus much about the banners and flags, because they are so effective in such national displays, and because they *might* be made so much more so, if but artistically treated and thought a little about, and harmonised with each other.

We might write a good deal on the show generally, and on the "stands" put up in so many places, and which effectively broke every now and then the dull house-frontages, some of them very handsome; and on the "Venetian" flag-staffs, the right forms and placing of which were, as we take it, so utterly missed; and a multitude of other little details to be observed by the eyes of the curious; but our main object is to say a word or two on the Ludgate-hill and St. Paul's part of the show. We do not mean the inside of St. Paul's, which may come in at another opportunity, but to the outside of it, and on the strange effect of the red and blue lights display. By a kind of accident, we must suppose, it was that some four or five enthusiastic scientific people took it into their heads to light up with fitful gleams the dense and packed crowd perfectly still and immovable sometimes, but coming down the famous hill at others in close streams somewhat in the way of a quickly-moving glacier, for nothing seemed able to stop it. There being so many of these intensely bright and moving lights, the strangest possible effect was produced; for the intensely bright and straight rays crossed and recrossed each other in every possible way, and produced an effect to be seen nowhere else on that eventful evening. We mention it for the sake of its singularity, for it does not seem to have been noticed elsewhere, and because it added not a little to the St. Paul's show. It was a pure and happy accident, like the packed crowd itself. Of course, too, there were flags in abundance, and illuminations of all sizes and kinds and degrees of costliness, and open windows, and, what to many might seem a kind of defect amidst so much glitter, the *dark* forms, shapeless enough, of the upper parts of the houses and roofs where visible, and there was also the dark-coloured crowd by way of foreground. What old Rembrandt would have said, or thought, or done, with such a chance, who can venture to say? He certainly never could have seen such a novel sight without some permanent impression being made on his mind, and which impression he could not have kept to himself; the world *must* have seen it *through him* on canvas or on his magic paper. But this, good as it was,—we say again by happy accident,—was not all, for there was, of course, the huge front and dome of St. Paul's in the far background, with its circles of coloured ship-lamps round the lantern and dome,—hardly enough of them, by the way, and too wide apart, but still, good, so far as they went, for they did not obscure or put out the building, as the close and too brilliant gas-jets do; the "architecture" being lost, you seeing nothing but the bright lights. It is always possible to overdo a good thing, and to spoil a good idea by working it to death. There was, as all know, one thing yet which it was thought would give to the whole display a sort of finishing-stroke, and make of the "Thanksgiving illuminations" a something *per se*, to wit, the lighting up of St. Paul's with red and blue fires. Some disappointment seems to have been felt at this part of the show, as failing somewhat; and to those who were in expectation of volcanic effects it certainly was so; but to many who looked only for what was possible, it was not a little striking. It was necessary to use some little judgment and physical force in the finding a place to see it properly. Nothing could possibly be stranger or more weird-like than the sight of the fine building when lighted up with its red fires and smoke, the sources of the light being invisible from a low point of sight, the whole of the strange and novel sight culminating in the coloured fires and smoke (not a little important element in it) seen for a few seconds from the golden gallery surmounting the dome. Some may think this mode of lighting a building a little too theatrical; but in reality it was not so: it was *real*,—and but for a moment or two, and gave one almost the idea of a mighty conflagration—the burning of a city. It has been said that Turner, after relapsing into falsities and artificial nothingness, was recalled to truth and nature by the sight of the burning of the Houses of Parliament. What would he have thought of this sight; and how, at his best, would he have painted it on canvas, with all his wonderful skill and lightness of hand in the painting of smoke, and mist, and darkness, and coloured light? It was truly, though so transient, a subject well worthy of his powers. What a pity it is that he has no successor to record the magic scene.

AN HOUR AT THE BRITISH MUSEUM.

THE recent remarks in our columns* on the study and restoration of the antique, have directed general attention to some of the noble marbles contained in the British Museum; and especially to that mutilated statue of Cupid, to which we more especially referred. In fact, something like a challenge was given for the careful examination of this exquisite relic. The challenge has been fairly met, in all honour and good feeling, and the results, as our readers will see, are in every way confirmatory of the justice of our remarks. With the frank concurrence and courteous aid of the officers of the Museum, it has been placed beyond doubt that this figure has been improperly restored.

The Cupid which is now in the Elgin room of the Museum, was found in fragments on the Acropolis of Athens, and was put together in the Museum itself. For a time it was called Icarus, being supposed to have formed part of a group of Dædalus and his son. The thongs or straps which cross on the chest, and which no doubt denote the slinging of the quiver of the boy god, led to this view. The figure has even been thought to have fallen from one of the pediments of the Parthenon.

* See p. 79, *ante*.

While the left foot, the authenticity, or rather the applicability, of which we questioned, is now attached to the figure, there is a piece of marble close by, which is actually separate, but which evidently formed a portion of the original plinth. On this fragment are to be seen the toes of the right foot. Careful comparison shows that they altogether differ, both in workmanship and in size, from those of the foot which has been attached to the figure. They have the same indescribable *cachet* of the Athenian artist that belongs to the body and limbs, and are as unlike the straight, harsh, ill-modelled toes of the attached foot as can well be imagined. Further, as far as it is possible to speak with certitude, in the absence of a chemical analysis, the marble of the foot differs from that of the statue. It is not easy to demand a more complete demonstration of the truth of the charge brought by M. Ravaisson against the restorers of the antique.

It is perhaps hardly realised by the public of this country how rare and how costly are the treasures of ancient art contained in the British Museum. The younger establishment at South Kensington has been wisely kept so much more prominently before the public, that the elder museum, acting on an entirely different policy, has been somewhat eclipsed, so far as general attention is concerned. This is by no means as it should be. While South Kensington contains so much of the artistic wealth of the era of the *Renaissance* and the succeeding periods, Bloomsbury is alone in this country, and, to some extent, alone in the world, in respect of the stores of the antique. We do not at this moment speak of the extremely interesting series of Egyptian monumental sculptures; or of the more recently added contents of the ruined mounds of Assyria. But with regard to the age and the country in which sculpture attained its highest perfection, a very large proportion of all the known specimens of the work of the schools of Phidias and his contemporaries are actually within the walls of the British Museum. The Elgin collection was made by the Earl of Elgin, when ambassador at Constantinople in 1801-1803, under the powers of a firman from the Porte, and has probably been the means of rescuing the mutilated sculptures of the Parthenon from utter destruction. While antiquities, to tell their whole story, should always be studied *in situ*, and while the defacing of a monument for the purpose of ornamenting a museum is, in itself, an act of barbarism, the case is altogether altered when the alternative lies between deportation and destruction. The fire of the Venetian fleet, in the year 1687, caused the most fatal damage to the Parthenon. From drawings which were made in 1674 by Carrey, a French artist, of the sculptures of this temple, it is evident how much more damage has been done by war than by either time or earthquake,—the two fatal causes which have, by their combined operation, destroyed the greater part of the unrivalled sculpture of Greece. The Venetian general, Morosini, might have been an English rustic, or a landed proprietor in the vicinity of Avebury, and yet not a greater barbarian than he actually was.

The remains of the sculpture, from the hands of Phidias and his school, that filled the pediments of the Parthenon, as well as those of the metopes and the frieze of the same temple, form the basis of the Elgin Collection. With these magnificent ruins are placed some remains from the Erectheum, from the Temple of Wingless Victory, and from the Choragic monument of Thrasyllus. Near them are casts from the Temple of Theseus, also at Athens, illustrating the art of about twenty years earlier than the era of Pericles. In the adjoining hall, called the Hellenic room, is a collection of marbles from the ruins of a Temple of Apollo, near Phigalea, in Arcadia, which was built by Ictinus, the architect of the Parthenon, in B.C. 430. There are here also casts from the metopes of a temple at Selinus, in Sicily, representing the archaic state of Greek art; and casts from the pediments of a Doric Temple of Minerva, in the island of Ægina, which is thought to have been erected about B.C. 500–478.

To this nucleus of Greek antiquity has been more recently added a group of relics from the Mausoleum at Halicarnassus, formerly one of the seven wonders of the world, which was rediscovered by Mr. Newton, in 1857. This celebrated monument was erected by the conjugal piety of Artemisia, the widow of Mausolus, Prince of Caria, to contain the remains of her deceased husband. Its date is about B.C. 352. It consisted of a lofty basement, on which stood an oblong Ionic edifice surrounded by thirty-six Ionic columns, and surmounted by a pyramid of twenty-four steps. The structure rose to the height of 240 ft.; and it was crowned by a chariot and horses of white marble, in which it is supposed that a portrait statue of Mausolus was placed, as if in celebration of his apotheosis. Around the building ran a frieze, representing, in high relief, the battles of the Greeks and the Amazons. The four sides of the tomb were decorated by four celebrated sculptors of the late Athenian school, Scopas, Leochares, Bryasis, and Timotheus. The chariot group was the work of Pythos. The sculptures of the various friezes, reliefs, statues in the round, and colossal lions that surrounded the tomb, were all of Parian marble.

Of this magnificent monument, the remains which are now arranged in what used to be called the great Elgin room of the British Museum, consist of architectural marbles, such as capitals, mouldings, lions' heads, and floral enrichments; sculptures in relief, which formed portions of friezes or smaller panels; and sculptures in the round. Among the latter are the statue, it is supposed, of Mausolus himself; that of Artemisia, represented as the deified charioteer of his car; and fragments of male and female figures, horses, and lions. The interest of this noble collection, whether we regard the unrivalled fame of the monument itself, or the value which is given to the relics by the precise determination of the date of their execution, and the names of the sculptors, is extraordinary.

There are now on their way to the Museum relics, of a scarcely less interesting character, from that famous Temple of Diana at Ephesus, of which we have recently spoken at some length. The great peculiarity in this case is the existence of sculptured columns, adorned with groups of figures in high relief; an unusual mode of enrichment, of which we find a later illustration in Raffaelle's cartoon of the Beautiful Gate of the Temple, and the reproduction of which has been recently attempted in the terra-cotta columns at South Kensington. We shall have occasion, on the arrival of this precious consignment, to give further particulars; only now remarking that the workmanship of these columns is such as to furnish yet another proof of the manner in which true artistic feeling is strangled and stifled by the passion for over-ornamentation.

We thus find, within the halls of our great national Museum, an unrivalled series of illustrations of the progress of Greek art from its archaic period to the commencement of its decline. The history thus displayed presents, in many aspects, a striking parallel to the history of Gothic architecture throughout Europe, as well as of that special branch of the subject which may be studied in our own island. Again, a similar history may be traced in the development of the art of the glass-stainer. That antique sculpture, Mediæval architecture, and a special art of decoration, which may be thought rather to have called upon the architect to afford scope for its display than to have waited upon any structural exigences, should have all followed courses so strikingly parallel, is a matter of more than ordinary coincidence. It evinces the action of something like a law of organic growth. This law is to be sought, however, rather in the mental characteristics of the great Aryan race, of which Greek and Teuton alike form a part, than in the essential principles of art. That such is the case is proved by the contrast afforded by the long-maintained and unchangeable durability of Egyptian sculpture and painting. Again, in the art of a race of a totally different blood, which we are only commencing to study, namely, that of Japan, we find but little to recall the successive stages of European art. What we do find, in these widely-separated cases of Aryan progress, is this. First, the mind of the artist appears to have been possessed with a deeply religious feeling, a sense of awe, and a desire to devote to the embellishment of the temples of his worship the full power of an energetic but inexperienced workmanship. As year after year the hand became more exercised in its cunning, increased facility of execution reacted upon conception. The stone, becoming more obedient to the chisel, reflected yet higher and higher creations of the imagination. In each case the loftiest sublimity of conception appears to have been attained before the hand of the artist had been trained to its utmost cunning. The broad and grand style which characterises the work of Phidias and his school is justly regarded as the acme of human art. Yet, on the ground of its plastic skill alone, it is not perhaps equal to that displayed in a somewhat later age, when the Homeric spirit seems to have evaporated from the marble, but when the latter had become as obedient to the hand of the sculptor as wax itself.

In the same manner we may compare the spirit and the execution of our own Early English and Decorated Gothic with the more elaborate details of enrichment by which perpendicular Gothic with us, and the Flamboyant style on the Continent, gradually became overlaid. Without discussing, at this moment, the cardinal periods of change, there can be no doubt that the course followed by Gothic art was, first to increase both the delicacy and the beauty of the structural lines, then to allow them to bud and bourgeon into lovely decorative foliation, and finally to confuse and conceal them beneath a mass of endless ornament. If we compare the lancet windows of such a structure as the Lady Chapel of St. Saviour's, Southwark, or the arches of the reign of Henry III. or of Edward I. in Westminster or in St. Alban's, with the pendent stone ceilings of St. George's Chapel at Windsor, or of King's College Chapel at Cambridge, the development to which we refer will become manifest. Again, in the advance in brilliancy of execution in stained glass, which may be traced from the twelfth to the sixteenth century, the same order occurs. The solemn grandeur of the Early English stained-glass windows produces an effect on the mind altogether of a higher order than that due to the fairy-like sparkle of the cinquecento work. Yet, as matter of manufacture, and of all the manipulation of the artist in glass, there is no doubt that the latter is very much in advance of the former.

The materials for sculptural scholarship, in which the British Museum is so rich, do not close with the Greek fragments. But it is not so much in sculpture proper that we now have to look for the elements of an historic review, as to that portion of the sculptor's art that is executed by the medallist. In the age of Alexander, it is believed, it first became the custom to place the head of the reigning sovereign on the obverse of his coins,—a place previously given to some religious representation or symbol. We do not know of a contemporary coin of Alexander of any very striking beauty to which we can at the moment refer; but in the Gold ornament room at the Museum, in a case of Greek silver coins, may be seen a superb coin of Lysimachus, bearing the head of Alexander, and no doubt struck from the die prepared during the lifetime of that monarch. We are familiar with the features of the great Macedonian from the exquisite three-quarter face gem wrought by Pyrgoteles. The profile on the coin is in no way inferior to the famous gem. The effigies of other sovereigns carry on the evidences of the state of art while passing from its religious stage to that in which it sank to little more than a costly mode of flattery; a flattery precious in its results, as it has given us a series of portraits of the highest physiognomic value. In the 1821 edition of the works of Professor Camper are to be found engravings of a copper coin of Bocchus, king of Mauritania (*circ.* B.C. 90), and of a silver coin of Pharnaces, king of Pontus, some half-century later, which contrast very favourably with the stiff head of Alexander, engraved on the same page. But to say nothing of any more or less idealised portraits, such for instance as those of Homer, of Sophocles, or of Pericles, there is, in the Museo Borbonico at Naples, a full-sized bronze portrait bust of Scipio Africanus, which must date late in the third, or early in the second century B.C., which even descends to the somewhat ignoble detail of showing the stumps of the hair over the whole of the closely-shaven head. Thus we come down with almost uninterrupted illustration to the portrait bust of Julius Cæsar himself, in the gallery of the British Museum, and to the yet more wonderful intaglio called the Payne Knight Cæsar, representing the same stern and lofty features, which come out under the glass in *altissimo relievo*, and full face.

Greco-Roman art is also finely illustrated. A recent purchase has been the statue of a young man, undraped, represented in the act of binding a fillet round his head. This was discovered in the theatre at Vaisson, the ancient Vasio, in France. There seems no reason to doubt that it is a copy of the famous Diadumenus of Polycletus, the companion statue to that still more celebrated figure of the Doryphorus, or spear-bearer, which is referred to as the canon of Polycletus. The Roman statue,

however, is a late and somewhat slovenly copy. The conception is thoroughly noble and antique, the execution is comparatively bald and poor. We should explain that, in forming an accurate and reliable judgment of style in sculpture, two special qualifications are requisite. One is, if not the habit, at all events the instinct, of the sculptor. No amount of observation will confer a true critical acumen on a person destitute of this artistic sense. The second requisite is, of course, knowledge of examples. The man who unites these two qualifications will be apt to say little as to style. He knows perfectly what it is. He can distinguish a Greek from a Roman bust or coin as readily as he can a horse from a donkey. But he no more thinks of boasting of this power than of his personal strength, beauty, keenness of vision, or any other natural and yet highly-cultured endowment. It is the man who knows little who prates much, and who tries to give weight to his opinions, for they are nothing but opinions, by reiterated assertion, and by the free use of technical slang.

We are therefore glad to be able to give other reasons for assigning a late date to the copy of the Diadumenos than the mere sentiment of style. When brought to the test of actual and minute admeasurement, this statue altogether fails in that exact proportion which characterises the Greek work of the best time. There were certain rules, into which we cannot for the moment enter, which were observed with such accuracy by the Greek sculptors, in proportioning the forms of different types, that they may be illustrated with equal precision from the symmetry of the grand Juno of Melos, an early Greek work, and from that of the delicate Venus de' Medici, a much later Rhodian work. The exactitude of reference to a certain modulus, in each case, is so minute that it amounts to absolute demonstration of this canon. But in the Diadumenos all is vague. The sculptor seems to have wrought by eye, and not by measure. In this very circumstance we may trace either a cause or a result,—at all events, a concomitant,—of the substitution of portrait sculpture for religious work. That fixity of rule which may be called conventional, but which was really but the reducing to system of the highest idealisation, is altogether inconsistent with the servility of faithful portraiture. Italian sculpture at this very hour illustrates this view. At no period in the history of art has the power of cutting marble been greater or more delicate than at present. Some of the modern Italian statues to which we referred our readers in our account of the International Exhibition at South Kensington last year were in point of execution absolutely wonderful. In some of them, it is true, there was merit of a much higher order than this mechanical excellence; but in others, more especially in a pair of portrait statues exhibited at the Workmen's Exhibition at Islington, realism appeared in its very basest form; they were vulgar photographs of men, which looked very life-like, but very vulgar. We may refer to the City statue of Peabody, and to the figure on the Thames Embankment intended for Brunel, as further examples. We have not exhausted the subject, either as regards the transformations which art undergoes in passing from the solemn and decorous penury of its cradle, through the might of its religious fervour, to its decline into the state of a mere pander to vulgar ostentation, or as regards the illustration of this progress to be drawn from the marbles, and even more from some of the unrivalled bronzes, of the British Museum. But here we must pause for the nonce.

We ought, in justice to ourselves, to add, that this is the first notice of the Diadumenos which has appeared in print. The statue in question has not yet been placed in the public part of the Museum. There is, however, another type of the same subject, which was purchased from the Farnese Palace at Rome, and which has been for some time in the Sculpture Gallery, to which our remarks may be taken as applicable. This copy was dug up, we believe, on the site of the Baths of Caracalla.

St. James's Park.—In the Commons, Mr. W. H. Smith has given notice that he will ask the Chief Commissioner of Works whether it is the intention of the Government to proceed with a Bill, whereof the plans are deposited, for obtaining powers to take a certain space of ground off St. James's Park, 350 ft. in length, and from 60 ft. to 70 ft. in depth, for the erection of additional offices for the Admiralty.

MEMS. CONNECTED WITH THANKSGIVING DAY.

IT is stated that the number of passengers conveyed over the Metropolitan, Metropolitan and St. John's-wood, and Hammersmith and City Railways on Tuesday (Thanksgiving Day) was 243,863. This serves to give some idea of the enormous number of persons who were out on that occasion.——It is about to be proposed in the Court of Common Council:—"That in order to testify in an enduring form the deep sense of this court of the national importance of the recent general Thanksgiving, a memorial window of a suitable character be placed in the new library now in course of erection, and that it be referred to the New Library and Museum Committee to carry the same into effect at an estimated expense not exceeding 500 guineas."—The subscribers to the Fleet-street Decoration Fund have resolved:—"That 20*l.* from the surplus fund (amounting to 59*l.* 11*s.* 1*d.*), and the scarlet cloth on hand be presented to King's College Hospital; that 20*l.* be presented to the Farringdon General Dispensary; and 10*l.* to the Police Orphanage, as an acknowledgment of the efficient services of the police on Thanksgiving Day."——Messrs. Sanger's Circus procession, which passed along nearly the whole line of route after the Queen had returned, was not the least striking incident of the day. It wanted harmonising and uniting by an artistic mind, but was, nevertheless, far superior to what is usually done in this way. The outlandish dresses were quite new, evidently, and were a mass of gold, silver, and colour, satins, velvets, and so forth. There were numbers of pretty horses; an immense gilt and painted erection (drawn by ten horses), with many smaller cars; a camel, or dromedary; an elephant, with his brilliant howdah; Cupids driving teams of half a dozen cream-coloured ponies; and a live lion crouched at the feet of a girl who represented Britannia, with helmet, shield, and spear. It was a risky thing to take such a cavalcade through the crowd, but we heard of no accident resulting.——As to the reported accident at Marlborough House, Colonel Hogg said, in the House of Commons, in reply to a question, it appeared from the report of the district surveyors that, after careful inquiry, they had not found that any structure which had been erected or was in course of erection in the neighbourhood of Marlborough House, up to the evening of the 26th of February, had fallen; but they stated that a standing-place, set up near the porter's lodge in Marlborough House-yard, and which consisted of loose planks, had been thrown down by the crowd, and was the cause of a serious accident. He desired to add, that the district surveyors performed their difficult task in a most careful way, and, after making inquiry, he had ascertained that no accident occurred to any structure they examined.——The expenses incurred by the Board in making arrangements for the accommodation of members of vestries and district Boards on the occasion of her Majesty's visit to St. Paul's, amount to 3,000*l.*——We understand that the proprietor of the *Central News*, through the courtesy of the cathedral dignitaries, introduced a wire into St. Paul's, and despatched a description of the ceremony to all parts of the kingdom as it progressed.——New locks and handles were made for the Temple Bar gates by Messrs. Hart & Co., the men working night and day to get them done in time, but they were, after all, not used.

COTTAGE BUILDING IN NORWAY AND SOME OF ITS TEACHINGS.

IN the present state of things architectural, so confused, and with so much that indicates a fast-coming change, it must be not a little interesting to inquire into the work and methods of work of those who have *not* had, as we have, vast heaps of art "precedent" to go by and to copy. It is not a little singular to reflect on that it has been reserved for these modern days to be so entirely at the mercy of what has gone before. In no other age of the world has the architecture of the *then present* been at the mercy of that which preceded it. It never would seem to have copied,—always followed or seconded. Each age or generation took up the work as left by those who preceded it, improved on it or no, as the case might be, and so, in effect, left behind them practically a new style, a growth out of that which preceded it. It did not copy or make effort to reproduce what had gone before, but simply went on with the work, and, by degrees, worked out a new style. Nothing can show this more convincingly than the primitive system of hut or cottage building in Norway,—*i.e.*, in those parts of it removed from the influences of modern and new systems of construction and new and patented materials. The subject is a curious one, and worth a little consideration and inquiring into, if only as a primitive system of doing things before style commenced, and before any one ever thought of copying. How to build architecturally and artistically, without any architectural precedent—in other words, to build up mere material constructively and ornamentally,—is an important question. It has been contended that this cannot be done,—that some definite architectural forms and ornament are absolutely necessary; and that these are the work of time and growth, and that no "architecture" in its full meaning, can come out of mere and simple construction; but it is a little wonderful to see, if you look a little below the surface, how much of architecture is to be found in the simply and rudely constructive. Before we go further, it is not a little to be regretted that no trustworthy system has as yet been invented of rendering wood *fireproof*; for the want of it, and the consequent disuse of timber construction, have thrown woodwork into the background. No wooden houses, where any sort of building art prevails, are now possible, so that timber house construction and fine art are of the past. This is to be regretted. A complete history of wooden house-building and architecture with wood only for its material is to be gathered in Norway alone; indeed, this history may be said to go back beyond the historic era, for there are evidences of wooden buildings on piles of a date far beyond written records. Architecture grew up here and there, doubtless, out of materials and simple and necessary construction, each separated nationality or race having its own.

But the main practical interest of the subject lies of course in the strictly modern plan of hut or cottage building, as it exists, and as people now live in such buildings. Of course we are speaking only of the purely *native* system of building proper to the country, and not of that which is gradually superseding it, and which has been borrowed from foreign sources. These cottages are formed of pine logs, but roughly squared, with the sharp edges cut off so as to be nearly octagonal. These logs are laid one upon another, and with a layer of moss between them in lieu of mortar. The logs forming the side or end walls are notched, so as to receive the ends of the timbers forming the front and back walls. Each log is from 12 in. to 13 in. or more square, so that the walls are about a foot thick. The walls are about 10 ft. high. In the better sort of cottages the whole of the interior of the rooms are lined or panelled, so that it would be difficult to discover a better system of building, or one more entirely suited to the climate. A warmer kind of walling could not be devised, nor one more "comfortable" in appearance. The floors and ceilings are boarded, the former raised from the ground by stone sleepers, a foot or two high. We hardly know what will be said about the *roof*; but why should a clever thing be lost sight of? Improvement of course is introducing *slate*, always neat, if not genteel, but the poor old Scandinavians looked to warmth and comfort, and perhaps to harmony and picturesqueness, if not to the "architecturesque;" and they covered their rough roofs with close boarding, then with birch bark peeled off in flakes; and then on this they laid earth about 3 in. in depth, retained by a fillet running along the eaves. A crop of moss of course soon covered this earth, so that a more picturesque or better coloured roof could not be, or a warmer or better heat-protector or keeper-out of cold. The joiners' work is but rough, like the walls and roof, but all harmonises, and may truly boast of one good quality—it keeps out the wind and the weather! Surely such a system of building as this is as good as can be for the place it is in, and for the surroundings of rude forest, and rapid watercourses and lakes. Some might think this a better way of building a cottage than the thin-walled and meagre model cottage, which is, says a good authority, but "the skin of a house." The old Scandinavian and his not yet thoroughly civilised modern successor think nothing does but the solid timber logs between them and the cold. Nothing, indeed, can be more *comfortable* than the interior of one of these wood-walled and wood-lined rooms. With the prosperous

Scandinavian there is always a room for everything, for the material being so plentifully supplied by a bountiful nature, there remains but the trouble of building and putting together. Many of the houses are two-storied, and the stairs, from the ground to the upper story, are sometimes singularly quaint and architectural. Now, this is an old-fashioned way of work, and rough as may be; but we may ask, what workman is there that would not sooner live in such a tenement than in a patented, thin-walled, and corrugated iron roofed model-house of the most recent make and pattern, and choke-full of scientific inventions and improvements?

It will thus be seen,—at least, to some small extent,—that in this far northern and somewhat out-of-the-way country there now exist materials for forming some idea as to the origin if not creation of a style of architecture, the growth out of mere *constructional necessity*, and out of the materials afforded so abundantly by nature on the spot whereon it has grown up. We cannot in looking at it avoid the pressing thought of how much light is thrown analogically upon the origin and progress of Gothic architecture in these islands, for both are the results of Northern thinking out and requirements. We say "Northern," and use the word in place of a better, and as descriptive of the doings artistically and architecturally of a people distinct from Southern and Eastern races. It leads us, too, to the much-vexed question, now especially interesting, of how far is it possible to *invent* an entirely new style of architecture? Is it possible to create a new style of architecture to be founded on, and to grow out of, simple and necessary construction? and can it be accomplished in *one* age, or even so far carried on in one as to show itself as a something distinct in that age, and will the study of all other styles help or hinder it? No small amount of discussion might be raised on such a revolutionary project, and without something to go by,—"precedent" of some sort or other. There are some who might even go so far as to say the thing is impossible in the very nature of it. One thing, however, this Northern work undoubtedly shows, and it is this, that art and architecture may grow out of bare construction with "precedent," or a something to go by, entirely absent. This simple architecture harmonises perfectly with the scenery and surroundings of the place it fills. There is no jarring element in it. As to the modern transplanted villas and smart houses, you wonder where the latter came from, and who could possibly have imported them, so fearfully do they put out nature,—the nature which surrounds them,—a primeval forest growth, nature's own work, and which, as it would seem, man cannot without more capital and science destroy. What a pity it is that "improvement" has not stayed its hand here and there, and left us a town or even a small village from the old days,—some small collection or group of houses, whereon no disturbing artistic element would be found, with its quaint inn, irregular streets of houses, so truly "picturesque,"—its small church, and all those other little quaint things, once upon a time to be seen everywhere. A little of this, as all know, is to be found here and there, and the antiquary and the architect have ransacked England to find them out, and to transmit them to posterity on paper; but the things themselves are fast disappearing, and must soon be numbered with the things that were. But in Norway these strange things are yet to be seen, and a curious light indeed they throw on things architectural and artistic.

A FRENCH ARCHITECT ON THE ARCHITECTURE OF THE SECOND EMPIRE.

FRENCHMEN, naturally more emotional than ourselves, are more given to import their emotions into their business affairs. Since the downfall of the Napoleonic dynasty, and the crushing disasters which followed it, little has been publicly spoken or written in France on any subject whatever without an ultimate reference to the woes of the country and their supposed causes, or without an anathema hurled against the invader. The architects of France have, naturally enough, proved no exception to this rule. In graveside orations they have added a political lament to the expression of personal sorrow, and in written disquisitions they have endeavoured to cast odium of failure on the shoulders of the *régime* under which they recently flourished. One of the latest architectural opponents of the Second Empire is M. Daniel Ramée, and his strictures have been admitted, under reserve, into one of the Parisian professional journals. The charges which he brings forward are numerous, and expressed in no measured terms. Many of his *confrères* differ from him; but many also agree with him; and in order that our readers may understand the views of those French architects who look on the darkest side, we translate a portion of his lengthy tirade. He says:—

During the eighteen years from 1852 to 1870, Paris and many other towns in France have completely changed their aspect. The venerable monuments which recall the national traditions and memories and glories of the past have been gravely marred and mutilated, cut down, and hacked about,—have even been thrown to the ground to make way for edifices of no intrinsic artistic merit. Moreover, a deplorable change has gradually taken place in the public taste, and particularly in architecture. There has, perhaps, never been an epoch which is richer in resources and materials of all kinds; and never in any epoch or among any people have public works absorbed a larger amount of the public money. Yet there has never been a people who, with so vast means of execution, have produced such paltry results or results so sad and regrettable.

The degradation in which architecture lay under the feet of the Second Empire arose from two principal causes:—first, the equivocal and pernicious management of new architectural schemes; and second, the thoroughly bad and insufficient education given to students destined for the architectural profession. It is of the first alone that we shall speak. Under the Second Empire everything was sacrificed to the consolidation of the throne of Napoleon, and in pandering to the depraved tastes of those who helped to establish it. Under that Empire architecture, like the other arts, was abandoned to intrigue, and partially to baseness, to masterly incapacity, to confusion, and to disorder. And architecture itself was without unity, without knowledge of its lofty purpose, without sincerity, without healthful fancy, and last of all without that elegance which is one of its chief attractions. All these faults arose from the absence of a capable, enlightened, independent, sagacious, and really national supervision. The ministry of Public Works was awarded by chance, by favouritism, or through the influence of those in Court favour, and was at the mercy of vain and inflated cliques, who utilised the power of office to carry out their own whimsical and fantastic caprices. Hence naturally emanated those servile and often burlesque conceptions in which oddity and frivolity predominate, in which a meagre and foolish fancy prevails, and which are marked by degeneracy of taste and a want of suitability to the times,—in short, which, while seeking to derive inspiration from the masters of the art, only succeed in bringing forth hybrid works without character; which are displayed, too, with impertinent assurance and stupid satisfaction before the public, in whom they excite little interest and still less admiration. For the real non-official public looked with a cold and indifferent eye on those edifices which cost it so dear, which it saw surcharged with blunders and inconceivable artistic liberties, and which are but bad imitations of the styles of the past on their decadence. This public was, moreover, disgusted with the boastfulness which thought to impose on enlightened and independent spectators; it was astounded at the audacious presumption which outraged and violated it, which provoked and annoyed reflective people, and which excited the contempt of all true artists.

The more we regard the architecture of the eighteen years of the Second Empire the more does it appear insipid and inconsistent. The works produced during that time are only an eternal reproduction of academic types, which have been stereotyped for years, and which it is fatiguing to encounter without variation on every occasion.

To pile stones on stones, mouldings on mouldings, columns on columns, to fill deformed niches with second-rate statues, or to raise them on pedestals and entablatures, to leave no blank space in the elevations, but to cover them over with debased profiles and sculptures of doubtful merit; to add ornaments which are of no conceivable use in the positions which they hold, except to mislead the eye, and detract it from the weakness and poverty of the architectural composition, has not resulted in the production of a real work of art, and has only given satisfaction to the vulgar and the interested creatures of the Empire, but never to those animated with a love of what is suitable and beautiful and true. The First, like the Second Empire, suppressed liberty, and used its every energy to hasten the national decadence, so that it might establish its own absolutism. The intellectual tone has been lowered, and all creations of the imagination have been less bright and glorious. The Arts were stranded in the universal shipwreck in which our military glory foundered. With very rare exceptions, the buildings of the Second Empire, tricked out in the unintelligent gaudiness of the *parvenu*, and hurried up with so much precipitation, remind us of the structures of Augustus and of Constantine. To produce works quickly and abundantly, to prefer quantity to quality, seem to have been the device of these princes,—and notably of the former,—to consolidate their dynasties; and the Second Empire has not failed to pursue the same course with the same end in view.

EXHIBITION OF THE ROYAL SCOTTISH ACADEMY.

IN our annual remarks upon this exhibition, we have made it our aim neither to praise inordinately nor to blame severely. Overlaudation is, we believe, more detrimental to the progress of art than the opposite; for by it many have been encouraged in the production of mere mechanical representations of nature when they might have been more happily employed as decorators, or in some useful handicraft. It is no pleasing task to speak unfavourably of works by which men gain a livelihood; but when these are exhibited to the public, criticism is courted, and it is unreasonable to chafe against unfavourable comment, when every scrap of praise is eagerly appropriated.

It is with satisfaction we remark that an unusual number of works have been rejected this year,—satisfaction not at the disappointment that will undoubtedly be experienced by many, but at the good effect it will have upon art, in stimulating the careless to greater exertion, and in causing some to consider whether it would not be to their own advantage to abandon a pursuit for which they are unfitted. Notwithstanding the smaller number of works exhibited, there are still some hardly worthy of consideration, as works of art; but the general effect of the exhibition is more satisfactory than that of the last. It must not be thought that we enter the picture-galleries with the expectation of finding there a galaxy of genius: we are more than satisfied if we discover one star shining over so dimly, and a few satellites giving forth a reflected light.

As is usually the case, this exhibition derives much of its attractiveness from works which have previously been exhibited elsewhere; these include Landseer's "Rent-day in the Wilderness," Orchardson's "Toilers of the Deep," Pettie's "Sally" and "Love Song," Halswell's "Pilgrims at Scala Santa," Baron Ley's "Marguerite, Duchess of Parma, giving Alms," Alma Tadema's "First Reproach," "Quail Fight in a Roman House at Herculaneum," by Raffaelle Pozzi, and some others.

Many of the best known local artists seem to have reserved their works for the Royal Academy. This practice is gaining ground year by year, and the Scottish Academy may be looked upon as a nursery for its more powerful rival. It is therefore a matter of interest to cast about with the view of finding out the men likely to fill up the gaps.

Works by Mr. Robert Gibbs may have appeared at former exhibitions, but they must have been unimportant, as we have no recollection of them. In the only picture he exhibits he aims high, and does not miss the mark. No. 561, "Last United Visit of William Lord Russell's Family the Day before his Execution," reminds us of the well-known "Release" of Millais. The jailor who opens the door of the prison has his back to the spectator, but the figure is very suggestive; Lady Russell bears evident marks of deep sorrow, but she is dignified and composed, and the little ones are worthy of their parents. The manipulation is bold and effective, and the colour subdued and harmonious.

We have no recollection of meeting the name of William F. Hole in former exhibitions; he contributes three works to the present collection, all characterised by a certain degree of quaint.

ness. No. 115, "Chaucer reading to Blanche, Wife of John of Gaunt," represents the poet, the duchess, and two attendants in a garden, shaded by trees where peacocks disport in the sunshine, and a fountain trickles refreshingly. No. 376, "The Canterbury Pilgrims," is a humorous representation of the "sundry folk that by adventure y-fell in fellowship," treated in a conventional manner, and displaying much humour; and in No. 547, "My Ward, Sir," we are presented to a lovely and loveable little maiden, gracefully attired in the costume of a period of which the present is an unhappy imitation.

No. 157, "Old Mortality and Sir Walter Scott," by Mr. James Drummond, represents the enthusiast at his self-appointed task, restoring a tombstone, while in the background the parish clergyman is conducting the great novelist into the churchyard. Sir Walter is represented as a young man got up in the fashion of the period, and old Paterson, in a patched blue over-coat and leather leggings. In composition and colour, the picture (which is carefully finished) is good, but we do not find in the "Old Mortality" of Mr. Drummond those strongly-marked characteristics of the original presented to us in the novel. Mr. Drummond's other two pictures, No. 332, "James VI. calling at the Shop of George Heriot," and No. 414, "An Edinburgh Armourer's Shop, temp. Charles I.: a Highland Chief selecting Weapons," exhibit the artist's accurate knowledge of antiquarian details.

Sir George Harvey has in his "View of Shandon House" (151), undertaken a subject few could grapple with satisfactorily. The mansion is a new one, and the grounds around it are newly laid out and planted, yet the artist has, without shirking details, by means of skilfully disposed light and shade, and by his treatment of the distant landscape, produced a satisfactory result. No. 342, "The Eagles' Nest, Loch Awe," is in the familiar style of the artist, and the scene is impressed with a weird solitariness which is enhanced by the introduction of a single figure.

Mr. Mactaggart, although producing no large picture this year, appears to great advantage; his seaside scenes are fresh and charming. No. 69, "The Fisherman's Noon," is worthy of Hook, and "The Children at Play" (180), and those "On the White Sands," are delightfully natural. The shore, sea, and sky are in each case rendered with truth and simplicity.

No. 113, "The Peacemaker," by Mr. James Archer, represents a lady endeavouring to reconcile a Cavalier and a Roundhead. The incident is plainly told, and the expression and posture of the actors appropriate, but the drawing is very defective. Such, too, is the case in No. 181, "A Bit of Romance: the Host takes his Guest Home for the Night," where we have a horse which appears to have been studied from a wooden model, and the rider from a lay figure, propped on its back. The subject (a knight escorting a monk) is, however, redeemed to a certain extent by a quaint and Mediæval feeling which is attractive to some minds.

There are artists who paint a single figure well, but who avoid the greater test of depicting some worthy event requiring the delineation of action, expression, and emotion. Mr. G. Paul Chalmers must be reckoned amongst this class; he continues to exhibit single figures, all displaying much technical excellence, and, indeed, we have seldom seen finer *chiar' oscuro* and livelier flesh-tint than appears in No. 348, "Sympathy." We are quite aware that the mere grouping of a number of figures in a picture is no test of its merit, and that a single figure may possess all the finest qualities of art, but he who cannot go beyond that can never occupy a very high position. In No. 435, "On the Tummel," Mr. Chalmers has made his first essay at landscape painting, and in this branch of the art he promises to be successful.

Mr. Houston paints his figures on so high a key as to make harmony almost an impossibility. No. 53, "Danger," and No. 278, "The Watch on the Moor," are not badly conceived, but the glare of colour on the costumes is such as to render it impossible to paint up the landscape to it, and in both instances the landscape is an essential part of the picture, and evidently not intended to be subordinate to the figures.

Mr. W. E. Lockhart is very vigorous in No. 1, "Andalusian Quack Doctor," vigorous to a fault, for the brush marks are in some parts so strongly pronounced as to produce a feeling of slovenliness and harshness. This is the more to be regretted as the composition is admirable, and the delineation of character remarkable. The Quack, with spectacles on nose, seated upon his mule high above the surrounding crowd, is the very embodiment of a solemn humbug; but one's feelings are in sympathy with the young mother with her sick child, who carries away the highly-coloured drug as if it were an infallible remedy.

Mr. Robert Gavin appears to have visited the Southern States of America, and presents us with a number of subjects from Mulatto and Quadroon life, in which he contrives to give us an interest. No. 267, "Master and Slave" (a young master and a young and pretty slave), tells its own tale; she looks upon him as a god, he upon her as a chattel. No. 436, "The Planter looked upon the Slaver's gold, and then upon the Maid," exhibits a still more painful episode in the same sad story.

Mr. Joseph Farquharson, who was gaining a good position as a landscape-painter, has directed his attention to figure subjects, and has achieved a decided success in No. 456, "On Grannie's Knee," a cottage interior, with an old woman and child. The leading lines have a fine bold sweep, and the painting is solid and genuine.

Mr. Otto Lyde also exhibits a cottage interior, "Sunday Morning" (166), simple and pleasing. The number of cottage interiors exhibited is remarkable, many of them well painted, but conveying no particular sentiment or idea. This want is not, however, felt in the exhibits of Mr. Joseph Israels, which are full of expression, and charm us in spite of fearful drawing. The arm of the woman in No. 273 is swollen out to preposterous dimensions, and the feet of the child upon her knee are ridiculously small in proportion to its body.

We have on former occasions referred to the originality of the Scottish School of Landscape Painters,—an originality the result of the study of nature having for subject the noble scenery of the North. But it would appear that foreign art is beginning to exercise an undue influence upon some of the younger men, and in place of originality we have imitation. The Scottish School was originally founded upon the Dutch, but it had gradually emancipated itself and formed a new and distinctive school, influenced doubtless, from time to time, by others, but never stooping to slavish imitation. Form,—the first thing which catches the eye in nature,—was never ignored for mere effect, and, above all, truthfulness was its mainstay. Landscapes by foreign artists have, for some years past, secured a ready sale, but we suspect home imitations of such are not so likely to be sought for; so that, even in a mercenary point of view, the probable result is failure.

This tendency is observable in No. 22, "The Silver Dee," by Mr. A. D. Reid, in which truth is sacrificed to produce a silvery effect. In No. 413, "Broadsea," there is a similar sacrifice to breadth.

Mr. John Smart's landscapes are vigorous and truthful. No. 165, "Mid-day," is bright and effective. Those of Mr. James Docherty are appreciative, and Mr. James Cassie's full of repose and beauty.

As to the older hands, Mr. Waller Paton is much as usual; Mr. Sam Bough not quite up to his usual mark. No. 114, "London from Shooter's-hill," is stagy, and too much of a panorama; and Mr. Beattie Brown more varied in his subjects, and sensible as ever. Of the architectural drawings we will speak separately.

ROUND CHURCHES.*

M. LUCAS has taken, as the basis of his work, a well-known article in Britton's "Architectural Antiquities," which groups together the rude stone circles at Stonehenge and Avebury, the circular temples of Greece and Rome, and the circular churches of the Middle Ages, with special reference to the origin of the churches dedicated to the Holy Sepulchre, at Cambridge, Northampton, Little Maplestead, Essex, and in the Temple, London, and with a view, apparently, of showing that all circular temples are but an expansion and fresh application of the original idea that expressed eternity and infinity by the figure of a circle, in the most remote ages of the world. M. Lucas has enriched it with notes relating to churches built in honour of the Holy Sepulchre, in Spain, Portugal, Italy, Prussia, and Paris; has added a letter from Mr. Wyatt Papworth, dotting down a list of English works on the four English churches mentioned; and, evidently, in consideration of the services rendered him by Britton's labours, has entitled his volume a tribute to the memory of that industrious pioneer, in a dedication to two of his friends, Professor Donaldson and Mr. George Godwin.

In the essay no doubt is admitted as to the purpose of the numerous stone circles in Great Britain: they are circular temples, quite as unmistakably as though they were all on sites as secluded as that on the little rocky, sea-weedy islet in the St. Kilda group. There have always been nations that worshipped the sun, or the moon, or fire, or other visible object, who could not confine themselves within walls when engaged in their devotions; and these stone circles can be nought but the temples of those who could tolerate no other vault than that of heaven, and no limit to their prospect but that of the horizon. If Mr. Fergusson's theory that they represent victories in the battlefield, or other modern theories have met the eye of the French architect, they are not set forth to unsettle earlier convictions: the responsibility of these convictions, however, is left in words, with the author's translated.

The most ancient temples of which there are written descriptions are the tabernacle made in the desert by order of Moses, and the splendid Temple of Solomon. The essay passes from these and Egyptian temples to the six Greek circular temples mentioned by Pausanias; and thence to the more numerous examples in Rome and its environs, whereof the Pantheon is chief. After an enumeration of present remains, and transformations into Christian edifices, and the records of those that are now no longer seen, we are landed in England in company with the forty monks, under St. Augustine, sent by Gregory the Great to overthrow paganism and implant the doctrines of Christianity.

Our attention is particularly called to the pope's instructions not to destroy the Pagan temples, but to be content with displacing the idols, sprinkling the walls with holy water, erecting altars, and depositing relics; thus converting them into churches. They inform us that, in the instances where these directions were carried out, the form of the earliest churches must have been identical with that of the temples, whatever that may have been. And here Stukeley is brought in to suggest that the oldest churches were round. The Anglo-Saxon churches were also frequently finished with a hemicycle at the east end.

The tradition that the four round churches that we are thus gradually approaching were built by the Jews is next discussed and dismissed. M. Lucas adopts the view of Mr. Essex, and deems it unlikely that a form for which there is no Jewish* precedent should have been chosen by the Jews, or that buildings should have been erected by them in quarters not belonging to them. In Cambridge, the synagogue would have been located in that part of the town still known as Jewry. On the other hand, the tradition that they were built by the Knights Templars is examined and accepted. All four of the edifices mentioned, together with the two sanctuaries at Temple-Bruer and Aslackly, are attributed to this body.

Turning now to the Knights Templars, we are reminded that their order originated with Helen, mother of Constantine the Great, and was organised in the immediate neighbourhood of the Church of the Holy Sepulchre in Jerusalem. Bede's account of this edifice, as being a large round church, is quoted; and a slight outline of its fortunes indicated. The enthusiastic veneration of the Templars for the Holy Sepulchre probably induced them, it is suggested, when dispersed over Europe, to reproduce its configuration in the churches of their commanderies.

Then follow, from the sources we have indicated, short accounts of the four churches in succession. That of Little Maplestead being, probably, less familiar to our readers than the more famous edifices of Cambridge and Northampton, or that of the Temple, we will follow M. Lucas as to it for a few lines. Little Maplestead adjoins Great Maplestead, and both are parishes in the county of Essex. In the reign of Stephen, Robert Dosnelli, or Dorsnel, held Maplestead. His heiress, with the consent of her husband, gave the parish to the Knights Hospitallers of St. John, who established a preceptory in it, and, by means of gifts from many

* "Les Temples et Églises Circulaires d'Angleterre." Par Charles Lucas. Paris: Ernest Thorin. 1871.

* The round church in Abyssinia, described in the *Builder* at the time of the war, with the ark or altar in the centre of concentric circles, is interesting in this relationship.

benefactors, became very flourishing. After the Dissolution, their possessions, Temple Sultan and other estates, were given by Henry VIII. to Mr. Henry Harper, since when they have passed through the hands of various families. The church differs in plan from the other three, and is, indeed, *unique*. Its semicircular apse would suggest an early origin, but the style of the ornamentation does not confirm its evidence. The windows, arches, and columns, are all of thirteenth-century workmanship. Only the font, with its heavy and primitive ornamentation, suggests an earlier date; but this testimony is negatived by the small basin, in which the immersion required in the early ages of Christianity could not have been practised.

M. Lucas incidentally mentions the following churches as dedicated to the Holy Sepulchre in France:—The church of the *Saint-Sépulcre de Chauvigny* (Poitou); the churches of the Holy Sepulchre at Cambray, Abbeville, Mondidier, and St. Omer, in the North of France; those at Caen, Rouen, and Annecy; the Holy Sepulchre of the Church of St. John at Joigny; and the chapel of the Holy Cross of Jerusalem at Champigny. And he catalogues, with brief remarks, the church of La Vera Cruz, in Spain, which was built by the Templars upon the model of that at Jerusalem, and in honour of it; the great octagon chapel of the convent of Christ at Thomar, Portugal, founded, it is believed, by the first grand-master of the Portuguese Templars; the round church of the Holy Sepulchre at Brindisi, quoted as resembling that at Cambridge; the church of San-Sépolcro at Bologna, which is also of a round form; and the Cathedral of Paderborn, in Prussia, founded by Charlemagne. M. Lucas concludes with a more precise account of the Church of the Holy Sepulchre in Paris, built in connexion with a hospital to receive pilgrims passing through that city on their way to or from the Holy Land, in the fourteenth century.

Our increased facilities for travel give archæology an international, or cosmopolitan, character that increases in intensity year by year. It is pleasant to see that the stream of seekers flows to our shores as well as from them; and we thank the accomplished architect whose essay is now before us for his painstaking indication of the fact.

PRACTICAL EXPERIENCES IN VENTILATION AND WARMING.*

When, in January, 1868, this Society did me the honour to listen to my paper, entitled, "A few Remarks on some of the Sanitary Necessities of House Buildings," and my explanation of how these necessities had been provided for in the house built for me in Grove-street, an opinion was expressed by some of the members present that many of the ideas propounded and carried out were, at that time, new and merely theoretical, and a wish was expressed by Mr. Boult and others that I would give to the Society the results of the working of the plan, after twelve months' practical experience, by living in the house.

By your permission I will now lay before you my experience from living in the house, during four cold winters and four hot summers, both seasons being calculated to test severely the merits of both the warming and ventilation.

The points that it was thought required confirmation by experience were principally those connected with the warming and ventilation. It will, perhaps, be remembered that the plan recommended and adopted was to have a reservoir for fresh air in the centre of the house, with the rooms opening out of it on each side; and that this reservoir should be separated from the stairs lobby by swing doors, in order that the cold air, rushing in when the front door is opened, shall not pass into this reservoir; that the air shall be admitted into this reservoir specially, say, through gratings in the floor; so that it may be, at least, as pure as the air in the street, and that its quantity may be regulated according to requirements, and that it may be readily warmed when the air in the street is too cold to be admitted into the rooms without being warmed; that it shall be warmed either as it enters this reservoir or afterwards, but certainly before it is admitted into the rooms, and that this reservoir shall be repeated on each floor of the house, and with the same provisions; that the air in this reservoir shall have free entrance into the rooms, even when the doors are shut, either through the skirting-board or through the cornice of the room; that I preferred the cornice; that the vitiated air shall have exit through the ceiling,—and that, not directly to the external air, but up an interior wall to a chamber in the roof over the central reservoir, and that it should not even then have a direct exit to out of doors, but be drawn out of this chamber by a syphon, provided with a means of being kept permanently heated, in order to produce suction from the rooms, and to prevent all possibility of back or down draught,—and that, for this purpose, I preferred the kitchen fire; that the exit-flue from each room shall proceed separately into this chamber, and each have a separate entrance into it, in order that the syphon may draw equally from each room; and that each flue shall be regulated by a valve in its course, to open when the full current of ventilation is required, or closed partially when few persons are in the room, so as to hasten or retard the current of air in the room, or to divert the fresh warmed air altogether to the bed-rooms at night.

Such, then, was the plan recommended and adopted. Originally I did not arrange for valves to close the primary inlet openings, but I was afterwards driven to their adoption, because when the wind came against the front of the house it rushed up the lobbies and through the rooms at a most uncomfortable rate. The air is warmed as it comes into the ground-floor lobby by five coils, in two layers of Perkins's inch bore hot-water pipes. These pipes are heated by a stove in the basement of the stairs lobby. By this means the air in this lobby can be kept permanently at 65°. Instead of confining all the hot-water pipes to the entrance, it would have been better to have taken them up from the stove directly up to the attic floor, and carried a coil along each floor also, and ending with a few coils at the entrance. This I have since had done. I would here bear testimony to the perfection of Perkins's apparatus, as supplied by Mr. Gibbs: it is safe, efficient, economical, and almost all that could be desired. The greatest objection to it I have observed is that it has happened that in really cold weather it has required water, and, in this case, it has had to be let out to have some supplied.

Now, as to the central reservoir, corridor, or lobby, it appears to occupy much space, and may be thought by some to be a waste of space. What I have to say, after paying for the land and building and living in the house for four years, is that I am very thankful indeed that I appropriated the space for it; it is one of the greatest comforts and best provisions of the house; and I am sure that, after experiencing the comfort, no proprietor of a good house would regret such appropriation of space by his architect.

This lobby is lighted at night by Ricket's globes—these globes do not foul the air, and I wish I had adopted them throughout the house: this would have prevented all blackening of the ceilings. By having the central reservoir also as lobbies to the different floors, the heated air is checked on each floor, and prevented from rising at once to the attics, as it does when this heating takes place in the stairs lobby. By having the entrance of the air into the rooms independent of the door, it is continual, even when the door is shut; and by having it by numerous openings along the longest side of the room, it is nicely distributed, and perceptible current is prevented. And I still prefer that it should be through the cornice. There are advantages in having the inlet through the skirting, and there are advantages in having it through the cornice; but I am sure through the cornice has a preponderance of advantages. Though the skirting has the advantage of less easy travel of sound from the rooms, when the air in the lobby is warmer than the air of the room the ventilation is more perfect. But what does travel of sound matter when it is into a private lobby? So that this is really no advantage after all. And when is the air of the lobby warmer than the air of the rooms? Scarcely ever,—indeed, only when the heating apparatus is fully on, and the rooms are without fires; so that neither is this any real advantage. Nearly all the year round the air is colder in the lobby than in the rooms, and that also after having been artificially warmed; and there are about two autumn months and two spring months when, though it is scarcely necessary to have the heating apparatus at work, the air is too cold to be admitted directly into the rooms, or, at least, through the skirting directly to the feet of the occupants; but it is not then too cold to be admitted through the cornice, because by slowly falling through the warmer air of the room it becomes tempered before reaching the occupants: practically, I have found this to be so. And, besides, there are now and then days, even in winter, when it is not necessary to have the heating apparatus working; and, now again, the advantage of the entrance through the cornice comes in. So, taking all points into consideration, the cornice is decidedly preferable to the skirting for the inlet.

Having control over the exit-flues with valves enables one to economise heat, and to direct the current of fresh or of heated air through any particular room at pleasure; for instance, on a very cold winter night by closing the valves of the ground-floor and first-floor rooms, where the heated air is not wanted during the night, we have the full benefit of the whole of the heated air through the bedrooms.

The question may be asked: Why have a foul-air chamber at all? Why not carry the outlets from the rooms directly into the upcast, and thus save both foul-air chambers and downcast? Because, in that case, some of the flues would have suction and others none. Having a foul-air chamber secures the suction from all the rooms equally. The other plan has been adopted by Mr. King, in the new gas offices,—all the offices having a flue into the shaft surrounding the furnace flue, which is of iron. I shall watch the working of this plan when in operation.

The fresh air being drawn through dry cool cellars, it settles the dust and blacks, and, in the summer, becomes cooled; and, in dusty weather, it can be passed through canvas screens. That the ventilating-lobby should be separate from the stairs-lobby is absolutely necessary in every good house; for in no other way can steady, equable warmth and ventilation, combined with privacy, be secured. And this, of course, necessitates that the front door, or entrance into the house, shall be at one end of the house, and not in the centre of the front elevation. I grieve, whenever I see a good house built or being built with the entrance in the centre of the front; for I know that this is or will be necessarily a badly-warmed and ventilated house. By admitting the air specially into the central lobby, the quantity admitted can be regulated according to the number of persons in the house, and the way of the wind,—conditions absolutely necessary to the complete comfort of the house.

There are a few other innovations I wish to notice. For instance, the windows do not open,—they are fixed like church windows; four of the bedrooms have only two chimney-flues amongst them: the breakfast-room chimney-flue runs into the kitchen-flue; the principal chimney-breasts are in the outer wall of the front and back elevation, and the bells are electric.

Most persons object to the idea of windows not opening. My wife, in particular, protested that she should imagine herself in a prison, and go mad. I have, however, to say of the practical experience that I am confirmed in my own opinion of the wisdom of this arrangement in the *town*, when the house is properly ventilated; and my wife is not only reconciled to the idea, but says she is delighted that they do not open. It is a wonderful protection from dust and blacks, and from the necessity of dusting. The cleaning is done as in most good houses,—by men,—and costs me 20s. to 30s. a year. This *fixed* condition of the *windows* is not at all essential to either the ventilation or warming,—it is not at all involved in the principles, and it was adopted merely to assist to obviate the ordinary draughty nature of window-places, and to keep out the dirt. I have been disappointed to find that it has, with some, been thought essentially involved in the principles followed out. An open window would, of course, increase the *inlet*, which might be an advantage on a very hot summer evening. It is generally thought that one flue will not answer for two fireplaces: practically, however, it does, and, indeed, these fires burn as well as any other when only one of them is lighted, and much better when both are burning. This, I think, results from the flues meeting at equal heights, and the common flue being equal to the two. The breakfast-room flue was, at first, a failure; as originally designed it was as shown, the entrance flush with the inside of the kitchen flue; but it was found that when the common flue was occupied by the smoke from the kitchen fire the breakfast-room flue

* From a paper by Dr. John W. Hayward, read at a meeting of the Liverpool Architectural Society.

would not draw, so I got a shoulder put at the lower edge of the entrance into the kitchen flue. This remedied the difficulty at once, and now this is one of the best drawing flues in the house. This making one smoke-flue serve two fireplaces is quite independent of the principles followed, and was adopted merely for economy's sake. As to the chimneys in the outer walls, here is still a difficulty, and the only difficulty that now requires remedying. These chimneys are subject to gushing down-draughts, when the wind blows in gusts against the walls in which the chimneys are; for instance, the west or front chimneys smoke in puffs in strong west winds, and the back or east chimneys smoke in puffs in strong east winds. This is contrary, I believe, to the general opinion, as it is usually thought that the wind comes over the roof and curls down the chimney. I have tried several kinds of chimney-tops, amongst them the swivel cowl and archimedean screw, a horseshoe bend towards the roof, and the introduction lower down in the warm part of the chimney of an opening slanting upwards into the smoke-flue, but without success. I have now a straight long top, simply doubled at the termination; this has not yet met with the adverse wind. Of course it is not an essential part of the principles of warming and ventilating that the chimney-breasts shall be in the outer walls, and it was adopted merely to utilise the fire-draught to *assist* the ventilation. The electric bells also are a mistake: I do not recommend them for private houses. They are about the same cost originally; but they are a continual trouble and expense afterwards: mine have already cost me more in the absolute cost of sulphate of copper than the bells of my previous house cost me in repairs the six years I lived in the house, besides the annoyance of their not acting. Notwithstanding these imperfections, the working of the general arrangement fully answers the expectations originally formed: there are perfect ventilation and complete warmth throughout the house, so that persons may sit in any part of the room, and do not require to crouch over the fire; the smell of dinner is gone directly, and so is that of smoking in any room; the bedrooms in the morning do not smell like bedrooms; there is no offensive smell from the water-closets; and both the ventilation and warmth are easily regulatable, according to the requirements of the occupants, and the season of the year. Each room receives an ample supply of fresh air, so distributed that there is no perceptible current, and which in summer is cooled from 5° to 10°, and in winter is warmed from 10° to 30°; so that all the year round the atmosphere of the whole house can be kept from varying more than 8° to 10°; in the coldest winter it can be kept up to or above 65°, and in the hottest summer it can be prevented from rising above 72°. Of the comfort and advantage of these conditions I have had practical experience, not only in health, but also in disease. For some weeks of the winter '69 and '70 I had staying with me a young lady in the early stage of consumption, and I had my wife laid up with bronchitis; both patients felt the advantage of being able to range through the lobbies and whole house at any time with a full supply of fresh air, and without fear of the irritating effects of cold air. Also in the spring of '70 and '71, I had two of my children down with putrid scarlet fever: and I then felt the immense advantage of plenty of fresh warmed air going from the lobbies into the bed-rooms, and thence out of doors without returning into the lobbies, and with the ability to load the incoming air with disinfectants. By using disinfectants in the first floor lobby, the air entering the house became impregnated, and then passing through the lobbies into the rooms to out of doors without returning into the house, left my professional part on the ground floor free from any risk of infection, much to my own and my patients' satisfaction.

Finally, I am very well pleased with my bargain; and were I about to build another house, I would build it on the same principles, and in the same way, only that I would have a metal (cast iron) instead of an earthenware kitchen smoke-flue, in order to utilise more of the waste heat of the kitchen fire; it was a mistake to have an earthenware smoke-flue. It is, I am sure, the warmest house in winter, and the coolest in summer; and altogether the most comfortable and healthy house in this town. I speak now, not only from theory, but also from experience; and had I time to superintend the erection, I would have some houses built in the same way as a speculation, for I am sure they would be sought after, and would pay a good percentage on the outlay. . . . .

The primary inlet has an area of 5 square feet, the total area of the flue running into the foul-air chamber is 4 square feet, the area of the downcast shaft is 5½ square feet, and the area of the upcast, at the place of the anemometer, is 4 square feet; and the canvas across the primary inlet is 171 square feet. The air first passes through this canvas; this causes a loss of about 55 ft. per minute, *i.e.*, 55 cubic feet more of air would pass through the house per minute were the canvas removed; there is a further loss of about 8 ft. per minute when the doors of the rooms are shut over when they are open. The air passes up the upcast shaft at the rate of 220 ft. per minute. The area of the upcast is 4 square feet; 480 cubic feet, therefore, passed through the house every minute, independent of the suction of the fires,—enough to supply the standard quantity of 15 cubic feet of fresh air per minute to fifty-eight persons in the house at one time. But, supposing the ordinarily used fires were lighted, about 4,500 cubic feet of fresh air would pass through the house every minute, thus allowing each of the fifty-eight persons 77 cubic feet of fresh air per minute, or enough to supply 300 persons with the standard quantity of 15 cubic feet per minute; for, of course, the occupants would have the use of it as it passed to the fires. I have also ascertained that when the fires are burning there is no diminution of the quantity going up the upcast.

SHAM JEWELRY AND MORALS.

AT the Society of Arts, on the 28th of February, Mr. W. G. Larkins (editor of the Society's *Journal*), read a paper "On Trinkets and their Manufacture." In concluding, Mr. Larkins said,—Let me give utterance to an idea that has come into my head with regard to the matter of personal adornment. I am not going to say that makers and sellers of sham jewelry are lowering the morals of the country. I wil not say they aid and abet the actual lie of those who would have us believe their brass is gold; and I will not go so far as my friend, Dr. Dresser, who, in a paper read before us last year, asked if the destruction of Pompeii and the woes that have lately fallen upon our neighbours across the Channel, were not due to their false quantities in decorative art. But I do mind me of a sentence of that quaint divine, Dr. Andrew Fuller, who said that, in the time of Elizabeth, a "lady would as soon have patiently digested a lie as have worn a false pearl." I am afraid this high regard for truth is not characteristic of the present generation. There is, on the contrary, a good deal of show and humbug about even ladies and gentlemen, and "all is not gold that glitters;" [and it is possible that mock jewelry, false hair, pretended jewels, and other shams may blunt that keen sense of truth and right which distinguished our Saxon progenitors. At the same time, I am bound to admit that, by the rapidity and cheapness of manufacture now-a-days, things of beauty are placed before those who would never otherwise enjoy them; and perhaps, after all, as Mr. Wright says, "There is no valid reason why the factory-girl should not display her gilt buckle and brooch of the same design as the golden one worn by the lady of the villa." Art may thus serve the community by cheapening the cost of the beautiful, and afford gratification to the humblest members of society, by superior designs reproduced in the cheapest possible form, and attainable by all.

Mr. George Wallis, opening the discussion, said,—They had all frequently heard it asserted that anything which came from Birmingham must be an imitation; but he would say, if it were made as an imitation, it was sold as an imitation; and, whatever might be done by the retailers afterwards, it went out of the hands of the manufacturers honestly for what it was. He had had the pleasure of living in Birmingham for seven years, as Head Master of the Birmingham School of Design, now called the School of Art. He had known Birmingham from his boyhood, and had kept up his connexion with it ever since he left, in 1858, and during the time he was there or since, he had never read in any police report in the newspapers of any workman purloining the goods of his master, although they were in the habit of dealing with precious materials amounting to the value of a million and a quarter in the year. In 1855 he had the pleasure of reading a paper in that room, upon the "Recent Progress in Design," and he brought up from Birmingham a considerable display of the products of the town. Many of the objects were mounted upon cards, which were marked London so-and-so, and people thought they were made in London, but that was a mere myth; it answered the purpose of the manufacturers to cater for the whim of the retailer, and he mounted his goods accordingly. He should like to see this kind of thing done away with, as it would be more honourable and honest. In the Exhibition of 1851, Birmingham did not exhibit a single article of jewelry, but in 1862 they made a very excellent display, chiefly through representations made by him. Previously, the manufacturers said they did not care what the public thought about Birmingham jewelry; they sold it honestly for what it was, and did not care to betray the secrets of their customers. He was sorry to say that many persons, who ought to have known better, said they did not care to look at the Birmingham cases, because they did not consider there was anything worth looking at. There had been a deal of talk about French design, but he was satisfied that the French designers had led the English into some of the most outrageous absurdities, and it arose out of the incessant following of the mere whims and caprices of the French.

Sir Walter Stirling said he was much pleased at finding that Birmingham was in reality the temple of truth, for the general impression was quite the contrary. It was evident, however, from what Mr. Wallis said, that what was fictitious jewelry was honestly sold as such, and therefore there was no deception. He considered it a great public benefit that articles could be produced of the highest finish and beauty, without having intrinsically such a high value as to tempt housebreakers and thieves; and he hoped it would be more generally recognised that the beauty of trinkets should depend on the excellence and taste of their manufacture. The same principle applied in the highest circles of society, for he believed there was no such thing in use now, even at royal tables, as gold plate, except in rare instances. On one occasion, when dining with the Goldsmiths' Company, he inquired for the gold plate, but the only specimen shown him was a cup, which had been set before Queen Elizabeth. Even silver plate was now so closely imitated by electro-plate, that it was almost entirely superseded by it, and people might now sleep in safety, either in their town or country houses, without the fear of burglars breaking into their plate-closets and carrying off that which was not only precious as having been in the family, perhaps, for several generations, but also from its intrinsic value. It was very creditable to the artists to see such beautiful imitation jewelry, but, after all, there was nothing which could equal the beautiful appearance of pure gold. Indeed, having witnessed the Royal procession of the previous day, he was of opinion that even Temple-bar was vastly improved in appearance by the gilding bestowed upon it.

MASTER AND SERVANT BILL.

THIS Bill was issued to Members of Parliament and the public on Tuesday last. It provides that the Act shall come into operation on the 1st of January, 1873, and shall not extend to Ireland. Under the Act the whole of the wages of workmen shall be paid in coin of the realm, without any deduction, and without any condition as to the spending any part thereof. Every contract in contravention of the Act shall be illegal and void, and the workman may recover his wages as if the contract had been made in conformity with the Act, and as if any deduction had not been made, or as if such payment, so far as it is illegal, had not been made. Masters and masters' agents who make contracts imposing conditions, or using compulsion, as to the place or manner in which, or the person with whom any money paid on account of wages is to be expended, shall be guilty of an offence against the Act, as shall be also the person with whom such money is expended, unless he shall satisfy the court that he was in ignorance of such illegal contract. The Bill provides for the weekly payment of wages, or by special contract, and that a part only of wages may be paid, but such part to amount to not less than 90 per cent. No wages shall be paid on any premises licensed for the sale of intoxicating liquors, or at or within any office, yard, or place contiguous

to, or occupied with, such premises, or on any premises on which goods are ordinarily sold to such workmen. Where any goods have been sold or supplied to a workman by his master or master's agent, as or on account of wages, at a shop or place kept by or belonging to such master or master's agent, or in the profits of which they may have an interest, an action shall not lie against the workman, and the master shall not be entitled to any set-off for such goods. The Act is not to refer to deductions for school fees for short-timers, or for contracts for the school fees of other children, or for board and lodging when the workman lives with his employer, or for fines mutually agreed to between master and workmen; nor shall the Act deprive a master of the right of distraining for rent. The Bill provides for an audit of deductions, for education, &c., by auditors appointed by the workmen, and for appeals to the Quarter Sessions. Offences against the Act will expose to a penalty of 10*l.* for the first and of 20*l.* for subsequent offences. If passed, it may not be doubted that this Bill will prove the death-blow of the Truck system.

THE WALWORTH COMMON ESTATE.

The sixtieth letting of the land on the Walworth Common Estate, which is vested in the Governors and Guardians of St. Mary Newington, and which has, during the last few years, been let on lease for building purposes, took place on Monday last, at the Elephant and Castle Inn, where there was a large attendance of builders and others interested in property. There were sixty-three lots offered, fifty-seven being sites for private houses, and six for shops. With the exception of sixteen lots, the whole of the sites offered are situated in a new street, called Faraday-street, which has been so designated in honour of the Professor whose name it bears, and who was born in the parish of St. Mary Newington. This new street, which is 15 yards in width, and about 400 yards in length, is now in course of formation. Messrs. Stuart & Son, who officiated as auctioneers, stated, in opening the proceedings, that the bulk of the estate had now been disposed of for building upon, and there was little more left to purchase. All the lots offered were readily sold, there being an active competition amongst builders present for the several sites. The sites for the private houses, which contain an average area of 17 ft. frontage by 60 ft. in depth, and which are all intended for a superior class of houses, realised an annual ground-rent of 4*l.* 15s. per annum, on a lease for the term of eighty years, whilst the sites for two shops, opposite each other, at the corner of Faraday-street and Thurlow-street, containing, respectively an area of 24 ft. and 23 ft. frontage and 60 ft. deep, realised 10*l.* 15s. and 9*l.* 10s. annual ground-rent. The lettings of the day realised, in the aggregate, an annual ground-rent of 331*l.* This estate, upon which several hundreds of houses and other premises have been built within the last few years, whilst whole streets of others are still in course of erection, is now yielding a large annual revenue in ground-rents to the Newington governors, the average amount paid for the leases representing about 3,000*l.* per acre, as freehold.

SHEPTON MALLET.

Since our reference to this town, the inhabitants have held a public meeting regarding the matter. It considered there was a necessity for reform in the existing sanitary arrangements, and a committee was formed to consult as to the best means of procedure. Immediate action was deprecated, in view of sanitary legislation this session, yet it was thought that the committee might pick up many good hints in the meanwhile in the towns in which sanitary knowledge and action were more advanced than in Shepton Mallet. We were not surprised to learn, that at this public meeting there were some who believed the sanitary arrangements of the town were well-nigh perfection, and who were prepared at all points, to prove Shepton Mallet "the healthiest town in England." There are now such a very large number of "healthiest towns in England," that we commend with delight to all Improvement Commissioners, and other opponents of sanitary measures, the phrase recently introduced by an Improvement Commissioner, — "the healthiest town in Great Britain." It is a decided pull upon phrases.

The Duchy of Cornwall possessing a large amount of property in Shepton Mallet, the stream that runs through the town being part of it, it was asked to help in the work of purification; but for the second time the application has been refused, and with that peculiar air of grandiose snobbishness that we hope and believe only Duchy of Cornwall officials exhibit in such perfection.

They would offer no impediment to the improvement of the Duchy property, but they had given an answer in the year 1868 (or thereabout), to which you are referred. On the Duchy stream from Kilver-street to the Factory at Draycott, there are forty-three privies emptying more or less directly into it, and forty-two sewers, nine of which are public, draining between them the whole of this town of 3,500 inhabitants; and on this stream, just before it reaches the town, there is a brewery, and then a large factory; some portions of the stream are arched over, of course making the uncovered portions all the more noxious and nauseating. Mr. Rawlinson, in his "Practical Suggestions," issued by the Commissioners in Lunacy, says,—"Natural streams should not be arched over to form main sewers;" to which one might add in this case,—so much ignorance, so much mischief; for ignorance is not idle any more than knowledge.

In an uncovered portion of the stream about twenty yards in length, close to Leg-square, at least three sewers and three privies empty; yet in this place we saw a man doing his *weekly* washing of entrails for sausage manufacturers in the town, whose names were given us. 10 ft. or 12 ft. back from the banks of this same part of the stream, and in such a position that God's sun can rarely if ever reach them,—cold, dank, dismal,—there are two houses; in one of them there has been a fatal case of typhoid fever, and the people who live there are constantly ill. An agent of the Local Government Board should see the convenience on these premises,—not the outside only, but the inside as well,—and then he should go across to another outside the flour-mills opposite: he would eat no dinner that day. Now, that the Prince has had such an awful experience of the very disease that may at any time visit some of the tenants of the Duchy of Cornwall property in Shepton Mallet, we believe that, if a proper representation were made to him, more directly than has hitherto been done, he would at once cause inquiries to be made as to the existence of these nuisances. Pro.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At a Special General Meeting of the Institute held on Monday, the 4th inst., the royal gold medal, annually bestowed (subject to Her Majesty's sanction) on some distinguished architect or archæologist, was awarded to Professor Freidrich Schmidt, of Vienna, President of the Austrian Institute of Engineers and Architects, and holding the Government office of "Ober-Baurath," a title nearly equivalent to that of our First Commissioner of Works. Professor Schmidt designed the new Roman Catholic church at Vienna, the gymnasium in the same city, the Dominican church at Düsseldorf, and many other buildings of importance. He is also an honorary and corresponding member of the Institute. The meeting having next proceeded to consider the recommendation of the Council respecting the award of the Soane medallion and other Institute medals and prizes offered for designs, measured drawings of ancient buildings, &c., the following adjudication was made.

The Soane Medallion and 50*l.* (subject to the usual conditions as to Continental study), to Mr. Alfred Reading, of Hall-road, Handsworth, Birmingham, for his design of a town-hall.

The Institute Silver Medal and five guineas, to Mr. Fred. H. Reed, of London, for a series of elaborate and carefully-measured drawings, illustrating Tattersall Castle, Lincolnshire.

A Medal of Merit, to Mr. Fred. C. Deshon, of London, for a similar series of drawings, illustrating All Saints' Church, Edington, Wiltshire.

In the same competition, the drawings submitted by Mr. John Langham, of Leicester, and Mr. C. Bryan Oliver, of Bath, were "Honourably Mentioned."

The student's prize in books was given to Mr. William Scott, of London, for his design for a staircase in a domestic building.

The Council then announced their decision respecting the award of certain money prizes offered by Mr. H. W. Peek, M.P., for the best series of drawings, illustrating the restoration of Eastbury Manor House, and the Convent Gateway, Barking, viz.:—the sum of 42*l.* to Mr. T. E. C. Streatfield, for the best set of drawings of Eastbury Manor House; the sum of 20*l.* to Mr. Philip J. Marvin, for the second best set of drawings of the same subject; and the further sum of 10*l.* to Mr. Philip J. Marvin, for the best drawings of the old Convent Gateway, Barking.

It is understood that these prizes were offered by Mr. Peek with the sole object of encouraging architectural study, and with no view to the restoration of the building, which does not belong to him.

It is proposed that the formal presentation of the Royal Gold Medal and the Institute Prizes shall take place during the General Conference of Architects, which will be held later in the season at the Institute.

The next ordinary general meeting will take place on Monday, the 18th inst., when a paper will be read, by Mr. Wyatt Papworth, "On the Fall of a Church Dome, with Suggestions for its Construction on better Principles."

THE HOME AND THE MAN.

"As the home, so are the people."

What is progress? Let us reason.
Is it conquests grand and great;
Honours, such as we emblazon
With the emblems of the State?
Is it armies bravely quelling
Civil strife, that direst ban;
Or the building of a dwelling
Where to mould the future man?

What is progress, Lords and Commons,
Ye who guide the nation's will;
Can it be that man and woman's
Nature courts but human ill?
Is it schools for prayer and spelling,
For the Arab class and clan;
Or a healthy human dwelling
For the family of man?

Progress, human, is the solemn
Home foundation undefiled,
Man the grand Corinthian column,
And the ornament the child:
This is progress, onward swelling,
In proportion and in plan.
As we make the human dwelling,
So we shape the future man.

Let us build for health and morals;
Let us raise, in Heaven's name!
Homes to win us lasting laurels,
And to wipe away our shame.
Earthly triumphs these excelling
Are not in creation's span;
For improvement in the dwelling
Means improvement of the man.

C. C. H.

EARLY REMAINS NEAR GRACECHURCH-STREET.

In Corbet-court, a turning out of the west side of Gracechurch-street not far down from Cornhill, a pile of offices with large cellars is about to be built, under the direction of Mr. Crockett. Considerable excavations and clearances of old works are being made in consequence, and in the course of these, at a depth of from 16 ft. to 18 ft. from the present street level, remains of a small Norman arcade and other early work have been exposed. One of the stone columns, with its capital, is pretty perfect. On other parts of the site there are vaultings of rubble and concrete. The bearing-wall of one of these is seen to have been underpinned with good masonry, probably soon after the Great Fire. St. Peter's, Cornhill, close by, is of very ancient foundation. Even if the tradition which makes it the first Christian church in London, and takes it back to the year of our Lord 179, be put aside, there is evidence to show there was a church here in the year 1230. It seems just possible that the remains now discovered formed part of some of the buildings connected with this or the neighbouring church of St. Michael. Chroniclers mention a subterranean passage-way from St. Peter's. The "London Tavern Apprentices," it is said, penetrated it to a considerable distance about sixty years ago, soon after which occurrence it was bricked up.

ANCIENT TIMBER BUILDING AT LIMBURG.

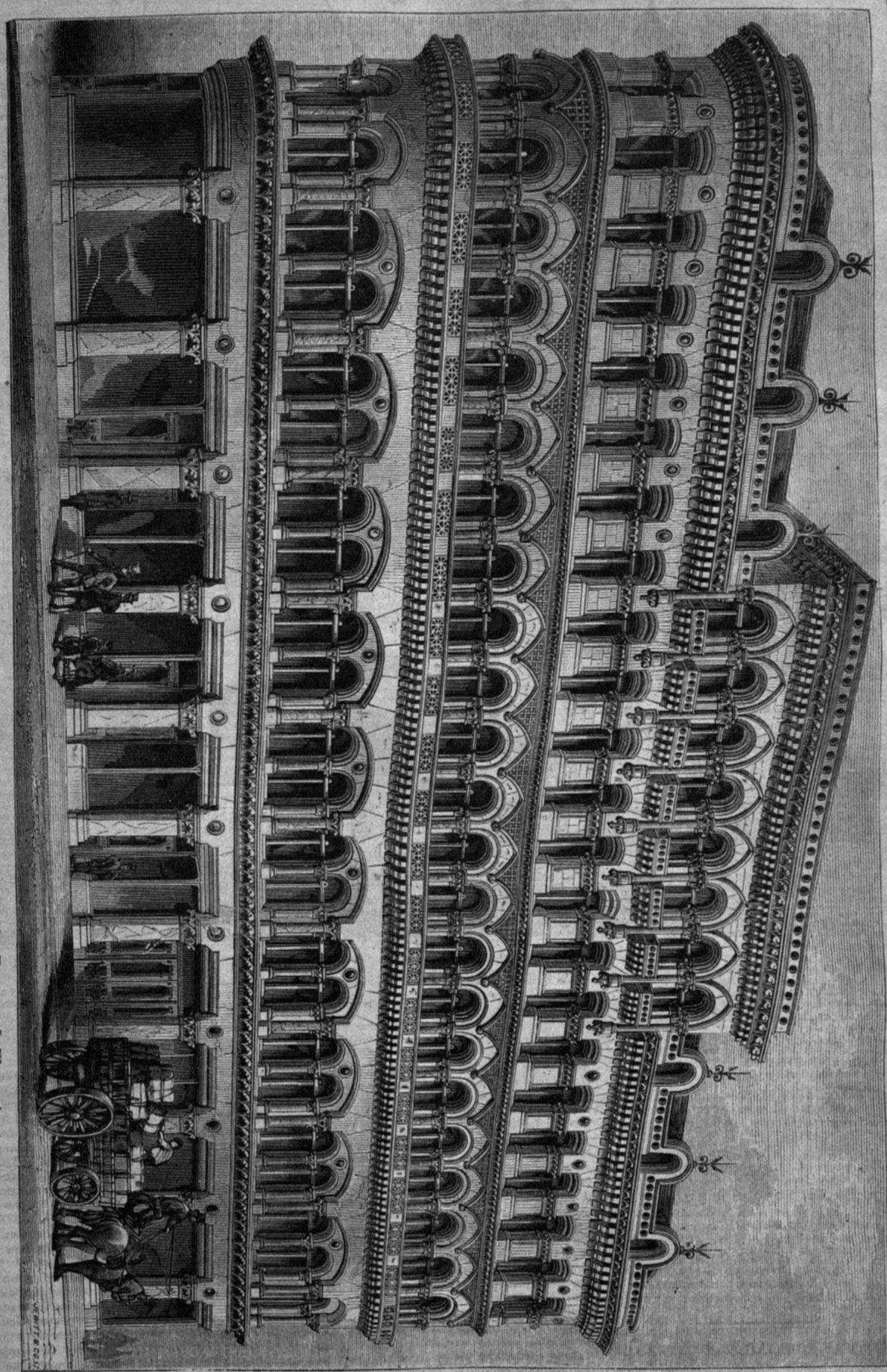
ANCIENT TIMBER BUILDING AT LIMBURG.

WE add one more to our examples of ancient timber buildings. It is to be found in Limburg-on-the-Lahn, to the east of the cathedral, and forms the interior of the courtyard of an ancient building, which was originally the dwelling-place of the canons attached to that church. This is an early example of timber construction, and may date from the fourteenth century. As will be seen from our engraving, the beams are chamfered in a very elaborate manner, as are likewise the uprights and the ends of the joists, giving a contradiction to the assertion of some members of the profession, who are wont to persuade themselves, and try to persuade others, that chamfers are a "modern invention."

CHEAP GAS FOR RAILWAY COMPANIES.

IT may be readily believed and easily understood that the expenditure for gas in lighting stations and booking offices constitutes a heavy item in the accounts of the railway companies that have stations in, or near, London. The London and North Western Company paid, if we mistake not, over 40,000*l.* for gas consumed last year in London and the suburbs, at its stations, warehouses, and booking-offices. Reference was made to this subject at the last meeting of the Metropolitan Company, and to the hope that could now be entertained of an important reduction in this item of expenditure, through an arrangement with a new gas company, that was ready to engage to supply gas of sixteen-candle illuminating power, at 2s. 3d. per 1,000 cubic feet. It is understood that the company referred to has already arranged to supply the Metropolitan, the Metropolitan District, and the London Chatham and Dover Companies, with gas of the quality referred to, at the price stated. A condition of the supply will be that the gas company shall be allowed to lay pipes along the railway companies' lines, from the gasworks to the stations or places where the gas is to be consumed. This arrangement will obviate the necessity, and, of course, the heavy cost, of an Act of Parliament, and will deprive the gas companies,—which are, as is well known, a rich and powerful confederation,—of a *locus standi* as opponents of the new company. Land for the new works has been taken at West Brompton and at Battersea, from which there is communication with all the railways having termini in London, north and south of the Thames, and all the stations in the extensive metropolitan railway district. It is stated that the gas rentals paid by the London railway companies amount to 175,000*l.* per annum, and that fully a third of that sum will be saved by their contracting with the new company. It will, of course, be seen that the arrangement between the railway companies and the gas company can be carried out without any interference with or breaking up of the roads or streets. It may be expected that the other companies will speedily follow the example of those that have contracted for the supply of better light, at a rate so much lower than that they are now paying.

Mr. George Flintoff is the engineer of the new company.



LONDON STREET ARCHITECTURE: ALBERT BUILDINGS, QUEEN VICTORIA STREET.—MR. FREDERIC J. WARD, ARCHITECT.

SECURITY AND SASH FASTENINGS.

SOMETHING has been lately said as to obtaining a safer method than the one in use for securing sash windows and reforming their fastenings.

Before making some suggestions to that end, I would point to the communications which appeared in the *Builder* on a cognate subject, from different correspondents, in the volume for 1870, "On Sashes and Sash Hangings." Most of our present sash-fasteners are useless for purposes of security, not alone from the fact that in the majority of instances they are "cheap and nasty," and of bad material, bad design, and worse workmanship, but because the sashes to which they are attached are not constructed in the right manner at the point where all the danger lies. The meeting-rails of the top and bottom sashes are seldom or never made of sufficient thickness or breadth. To allow for the thickness of the parting slip that separates both sashes, it is, of course, requisite to add to the breadth of the meeting-rails. Some sash-makers allow for the additional breadth on one rail alone; others equally divide it between the two. The first method is the worst, and the second method not much better, if what is technically called "hooking" or splaying both edges of the meeting-rails is not done. By this method both edges of top and bottom meeting-rails lap diagonally against each other. This method, though far more secure than a square meeting, is still not proof against a thin blade of steel or a knife being inserted between; but it is far preferable to the square section, as the blade or instrument used will have to pass in at a great inclination. The fastener can be put on in this instance in such a manner as almost to counteract any successful insertion of a blade unless considerable force be employed.

Here is, however, in our opinion a much better method. Let the edges of the two meeting-rails of both sashes be rebated, the meeting-rail of the lower or inside sash to overlap the outer, so that their rising and lowering will not be interfered with. To go to the rudiments, let us suppose that the thickness of the sash-stiles is 2½ in., and the parting-slip or bead in the sash-frame ½ in. thick. Let us allow, then, in the breadth of the meeting-rails for what will give a ½ in. or ⅝ in. rebate: the last will be found sufficient if the sashes are closely fitted. No knife or thin blade of steel can be inserted in this instance, as the projecting section of the rebate of the meeting-rail of the inside sash stops it.

In making sashes, it is always aimed at to give the meeting-rails as light an appearance as possible, from the belief that they ought, if possible, to correspond with the bars,—a very erroneous notion.

There is no valid reason why the thickness of the meeting-rail of an ordinary sash should be reduced to 1¼ in. or 1½ in., which is foolishly considered by many very gross for an ordinary sash meeting-rail. In fact, they should not be under 2 in. in thickness; but if men will aim at airy lightness, they must not anticipate security. In future, with a view of increasing the strength and security, and maintaining the lightness of appearance in the meeting-rails of ordinary sashes, I would recommend that the meeting-rails in every instance should be composed of either oak or ash. The rebate then would be more strong and durable, and would resist a much greater degree of real violence and open force. In respect to the suggestion of having the meeting-rails of sashes rebated, there will be some people who will pretend to see objections and eyesores at once; but before these are made we will anticipate them. As to a rebate being unsightly on a meeting-rail of a sash, it is no more unsightly than a rebate on a folding-door or a French casement window, which has to be so treated. One rebate only can be seen from the outside, and this only when the lower window is raised; and even in the window of the ground-story of a dwelling, no person, except those possibly bent on looking out for the sight, would take notice of the difference. As for the additional trouble in the preparation and fitting of the sashes, we see very little indeed. All sashes should be fitted to their frames before leaving the workshop or builder's yard and glazed. Fitting sashes after being glazed is an unworkmanlike fashion and leads to much loss of time and also loss of glass, as a great quantity of it is often broken when this slovenly method is adopted. The rebating of the meeting-rails will not interfere in the least with the space occupied by the sash-fastener, as there will be sufficient room for the screws and placement.

A word about sash-fastenings in general. They are, as a rule, flashy and bad, and instead of improving in quality they are growing worse, so far as goodness of material is concerned. In workmanship and artistic design they have little claims to "honourable mention." The old screw and spring sash-fasteners of thirty or forty years since were far preferable and more secure than any of our present descriptions. The screw and spring were protected in the barrel or tube; and when the screw entered its corresponding socket, at each revolution both sashes were drawn tighter and tighter together. The opening and closing of sashes when required was a little more troublesome, or, rather, was not so expeditious as now, but increased security was obtained. The more we consider the adoption of the rebating process the more we are convinced of its security, and are prepared to meet the objection which may be urged against it.

If the meeting-rails are closely fitted they will keep close for years, and sand-bags may be dispensed with. Any objection that may be urged in the matter of paint clogging up the rebate in course of time may be urged against a rebate in other instances, but no such thicknesses of coats of paint may be anticipated, as they can always be avoided and prevented at each repainting.

After all, it may be said that the publication of each new improvement or invention connected with the security of house property is but giving so many useful hints to burglars. Swift, by his humorous "Advice to Servants" how to cheat their masters, opened the eyes of masters and mistresses a little also, and led them to be more particular in their manner of leading people into temptation.

If burglars as well as builders are assisted by our advice we cannot help it, but for the further information of the latter, who may be the owners of house property, we would advise them to provide shutters for all windows, and also we would advise the Commissioners of Police to give instructions to every policeman on his beat to insist that all shutters to windows, particularly those belonging to the two lower stories, should be closed to before midnight. Porches or porticos to dwellings offer great facilities to confederated burglars or housebreakers, who can make ladders of their backs in the interest and pursuance of their profession.

Finally, *forcible* entry can only be resisted by force, or counteracted by precautions,—household precautions, and those belonging to the public and local authorities,—or, otherwise translated, the due vigilance of "the man on the beat."

A clever burglar is not stopped or awed by trifles; give him but the coveted opportunity and his drills, jemmies, and centre-bits, and even with the shutters fastened he will make a stealthy and almost noiseless entry. A diamond and a leather sucker will lift a pane of glass, or a piece of it, with a refreshing smoothness into the tail of his coat or working apron, and after that *open sesame* we will let the imagination of our readers supply the rest.

A CRAFTSMAN.

CO-OPERATIVE BUILDING INVESTMENTS.

AT a local conference of representatives from Lancashire Co-operative Societies recently held at Eccles, near Manchester, the employment of capital in buildings was very fully discussed. We condense a short notice of the conference from the *Co-operative News*:—The subject first considered was, "The Best Means for the Employment of Surplus Capital," and among many suggestions, that of cottage building seemed to find most general acceptance. If the buildings were adapted to the wants of the members, and suitably located, the investment yielded a good and safe return, and was advantageous to the members generally. It also conferred a political power which could be used in defence of industrial interests, when, as at the present time, an attack upon co-operative societies was expected on the part of the trading and mercantile classes.

In most cases the houses were built by the society, and either leased or purchased by its members. The Rochdale code of rules was commended, and their practice was to lend money for building purposes at 5 per cent. The working classes ought now to require good houses, and the co-operative societies might very profitably provide them. They frequently found private individuals do so to very good advantage. At Radcliffe they had built thirty-one cottages of a good class, most of which were let to their members, and they had now formed a building committee, to whom they had granted 4,000*l.* for building purposes. Each member paid a tenth of the cost to start with, and the rest quarterly. Cottages were generally preferred as an investment to cotton. But it was urged that there should be somebody on each building committee who knew the trade, and they should carefully watch the extras.

The Bacup Society was referred to as a surprising instance of the supply and employment of capital. They had already more manufacturing companies than any other town in England. They had been building cottages very extensively, having just completed sixty-five, and having passed the plans for twenty-two more. They would probably keep on building for some time, as they cauld dispose of the cottages as rapidly as they were erected. Their society had 12,000*l.* or 13,000*l.* invested in different companies. They had found building a most practicable method for the employment of their capital, and distributed the repayment from purchasers over thirteen years.

Over Darwen was another instance given worth example. They had found the capital for a paper-mill which was nearly ready for work. They had about 8,000*l.* invested in cottages, of which they had built about as many as they required. They had next agreed to go into coal-mining, and were then in treaty for the purchase of an estate. Having provided for their colliery they were thinking of a spinning-mill.

A FATAL MISTAKE.

SIR,—I am much disappointed, in common with many of your readers who interest themselves in the great question of public health, to find that Mr. Stansfeld in his new Bill permits the appointment of inspectors and medical officers of health still to be left in the hands of the local authority. Unless this important provision be altered, I venture to predict that the Bill will never work. The reason is short and clear: the "local authority" themselves are for the most part the great perpetrators of sanitary sins; and how can I report against the interests of my employers?

AN INSPECTOR.

ALBERT BUILDINGS, QUEEN VICTORIA STREET, CITY.

"ALBERT-BUILDINGS," now nearly completed have a frontage of 120 ft. to the new thoroughfare, Queen Victoria-street, with returns on Queen-street and Cannon-street of about 60 ft. each. The total height of the pile in the centre is 80 ft. The traffic to the upper portions of the premises is intended to be carried on by means of a hydraulic lift, in addition to the ordinary staircase. The material employed in the elevation is Portland stone, and very little ironwork is used in the construction. Mr. Frederic J. Ward, of Cannon-street, is the architect; the contractors are Messrs. Tress & Co.; and Mr. Frampton is the carver.

THE PROPORTIONS OF CORNICES.

SIR,—I have always found great difficulty in designing cornices to rooms so that they be neither too large nor too small. After many failures, I have adopted the following rule, which will, I think, be found to give satisfactory results:—

Take half the width of the ceiling and the height of the wall from the top of the skirting to the ceiling, and, whatever they measure in feet, set out in inches for the cornice. Let as many inches as half of what the ceiling measures in feet be set off for the members on the ceiling, and as many inches as the wall measures in feet be for the members on the wall. Thus the cornice will measure on the flat (not girth) a twelfth of the height and of half the width of the room, which for public rooms might be increased perhaps to a tenth part if they were low in pitch. Of course, the space thus set out is to be filled in with members and enrichments designed in due proportion with each other,—a matter with which I have no immediate business.

It will be seen that by this rule, if the room is narrow in proportion to its height, we obtain more members on the wall than on the ceiling; and, on the other hand, if it is wide, we have more members (in proportion) on the ceiling

than on the wall; thus obtaining a flexible rule, which the necessarily infinite proportions of rooms require, and which will, I think, be found convenient, and at the same time satisfactory in its results, and as such will, I hope, be useful to some of your readers, from any of whom, however, I should be glad to hear of a better rule, if such exists.

E. F. HUTCHINS, Architect.

THE NEW PUBLIC OFFICES.

IN reply to Lord Redesdale, the Marquis of Lansdowne said, in the House of Commons, that it was probable the public offices now building in Downing-street would be completed about the spring of the year after next. As to the second question, he could not say precisely when the houses between the new offices and Parliament-street would be pulled down. Rents were being got out of some of these houses, and the Government thought that it would be as well to have the advantage of those rents as long as possible. Besides, these hid from view the work now going on at the back of the side of Parliament-street in question. With regard to the noble lord's third question, the Government had no intention of widening the side of Parliament-street near to the new public offices. He agreed with the noble lord that there would be a certain amount of unsightliness if the whole of Parliament-street was not opened up; but it would not do to throw the cost of such an improvement on the whole country. If the widening of the street was found to be necessary on account of an increase of traffic, it would be different. In that case, however, the proper body to deal with it would be the Metropolitan Board of Works.

THE PROPOSED METROPOLITAN AND ST. JOHN'S WOOD RAILWAY.

ALLEGED SERIOUS INJURY TO HOUSES AND OTHER PROPERTY.

IT is stated that the proposed Metropolitan and St. John's Wood Railway, for which application is about to be made to Parliament, will very seriously interfere with the safety and value of property along the district which it intersects, and the consequence is that a determined opposition to it has for some time been resolved upon by the Marylebone Board of Works, which it appears is now to be followed up by the Metropolitan Board. It is alleged in opposition to the project that the company by their Bill are seeking for powers to interfere with houses and other buildings, without granting compensation, in a manner which has not hitherto been attempted by any public company. It is urged as one reason why the Bill should be resisted that it proposes to establish coal depôts in some of the best parts of the metropolis, which it is contended will materially depreciate the value of property in the vicinity; also that the time for the completion of the line was three years, so that the West-end streets might be blocked up for that period.

SCHOOL BUILDING AND OTHER WORKS AT GREAT YARMOUTH.

The new Grammar School, in the Trafalgar-road, is now approaching completion. The buildings comprise master's house and offices, dormitories, dining-hall, and other accommodation for about forty boarders. School-room, 65 ft. by 26 ft., with class-rooms adjoining. Entrance porch, with bell-turret over, spacious lobbies, and the necessary offices. The buildings are of Gothic character; the walling material is red brick, with stone dressings. The expenditure has been about 4,500*l.*

St. Peter's National Schools.—These schools have recently been enlarged, additional accommodation having been provided for about 100 children.

St. James's National Schools.—The designs for these schools were prepared about four years since, at which time the Infant School was built. Contracts have now been entered into for the completion of the group by the addition of boys' and girls' school, with the necessary offices. Accommodation will be provided for about 500 children. The buildings are of Gothic character, walls of red brick, roof open timbered. The cost will be about 1,500*l.*

St. Nicholas (Priory) National Schools.—Considerable additions are about to be made to these schools, by which accommodation will be provided for about 180 additional children.

St. Mary's Roman Catholic Schools.—New rooms have just been completed in connexion with these schools. Accommodation is provided for about 100 additional children.

St. George's Denes.—New school-rooms, class-rooms, and lecture-room have been erected, adjoining to, and in the area of the Baptist Chapel. The lecture-room is over the school and class-rooms, and is about 50 ft. by 30 ft., with open-timbered roof. Convenient and direct access is obtained from the lecture-room to the galleries, and from the school-rooms to the ground-floor of the chapel.

Dwellings for the Working Classes.—The Great Yarmouth charity trustees have instructed their architect to prepare plans for laying out a portion of their estate, near the Caistor road, for building purposes. The site contains about 7½ acres, and it is proposed to erect thereon about 200 small houses suitable for the various grades of the operative and working classes. The general plan and scheme for laying out the ground have been approved by the Charity Commissioners of England and Wales, and designs have now been prepared by the architect for the whole of the dwellings.

Mission Church.—It is proposed to erect a new Mission Church (Countess of Huntingdon) here, in a rapidly increasing part of the town. The building will be Gothic in style, with flint walling and stone dressings.

The architect in all these cases is Mr. J. L. Bottle, of London and Yarmouth.

THE CURACY HOUSE, PEWSEY, WILTS.

THE Curacy House in the High-street has been pulled down. The new building recently finished is of a Domestic Gothic character, constructed of red bricks obtained from Devizes, relieved with bands and arches of coloured bricks, and having dressings of Bath stone. The roofs are covered with Staffordshire blue and brindle tiling, laid to patterns. The entrance porch forms a feature in the front elevation, having a bold open-timber roof, supported on brackets and stone corbels, rising between the two front gables. All the windows have been filled in with quarry lights and tinted cathedral glass, supplied by Messrs. Watson, of London. The ornamental ironwork was supplied by Mr. Shrivell, of Long-acre. The works have been carried out by Mr. Thomas Edwards, builder, from the designs and under the supervision of Mr. John Birch, architect.

OLD ST. PAUL'S CATHEDRAL.

SIR,—In the *Builder* for February 24th, I notice an article on Old St. Paul's Cathedral, by Mr. E. B. Ferrey, reference being made to an earlier church, which might have been afterwards "cased." Perhaps Mr. Ferrey may not have seen the following extract from Pepys's Diary, September, 1668:—

"It is pretty here to see how the late church was but a case wrought over the old church. You may see the very old pillars standing whole within the walls of this."

The above appears to have been entered by Pepys in his Diary, after paying a visit to Old St. Paul's Cathedral, then being pulled down.

J. HORDERN.

SCHOOL BOARDS.

Bradford.—At a meeting last week, Mr. Neill moved the adoption of the plans, specifications, and estimates submitted by Messrs. Lockwood & Mawson for schools in Feversham-street. The cost of the schools, he said, would be 9,232*l.* of which 7,000*l.* were for the buildings, 1,400*l.* for the playgrounds, 250*l.* for fittings, 532*l.* 10*s.* for architect's commission and clerk of works, and 50*l.* for contingencies. A sum of 630*l.* for paving and draining of streets and 132*l.* for expenses of conveyance had been included in the former vote of 8,750*l.* for the land. He did not think they could ask the ratepayers to sanction the erection of a school that could be much plainer from an architectural point of view than the one shown in the plans. In Bradford hitherto, whenever a public building had been erected, the general feeling was, after a few years, that it ought to have been better done. In the matter of the street improvements, the men who had advocated the more ambitious plans had incurred a good deal of unpopularity at the time, but public opinion was year by year coming round to their view. If they looked at schools built twenty years ago, the general feeling now-a-days was, that they were out of date, and that it was about time to rebuild them. He urged that if 50,000*l.* or even 100,000*l.* were spent on schools for Bradford, it would not be a great tax on the people. Mr. Coates said he was acquainted with the case of a school nearly as large as the one under consideration, the cost of which, including the land, would be about 6,000*l.* He might add that the cost of these proposed schools would be 23*l.* per head of the accommodation, against an average cost of school construction of 7*l.* per head. Mr. Neill said the actual cost of the schools would be 22*l.* 10*s.* per head. He did not know what school Mr. Coates was referring to, but he supposed it would be Bishop Ryan's school in Captain-street; he should be sorry to see those of the Board built in the same way. The resolution was carried by six to four.—Mr. Neill next moved that the Board adopt the plans, specifications, and estimates produced by Messrs. Milnes & France for schools in Bowling Back-lane. The estimates of this school by the architects amounted to 7,000*l.* The buildings were set down for 5,000*l.*, the playground 1,071*l.*, fittings 185*l.*, architects' commission and clerk of works 482*l.*, and contingencies 263*l.* The whole cost of the school, when complete, including land, would be 9,250*l.* The playgrounds would be laid with stone to a depth of 12 in., with asphalte over. The motion was carried, all except two voting in its favour.—Mr. Neill then moved the adoption of the plans, specifications, and estimates submitted by Messrs. Simpson & Langley for schools in Ryan-street. These schools would cost about 14*l.* 2*s.* 6*d.* per head of the accommodation, including the price of the land. The estimate for the buildings was 6,300*l.*; for the playgrounds, 1,500*l.*,—a recreation park for Little Horton almost; 500*l.* for architects' commission and clerk of works. The total cost, including that of the land, would be 11,300*l.* The resolution was carried. Mr. Neill then moved that the clerk be instructed to write asking the Education Department to recommend the Public Loan Commissioners to advance 25,682*l.* for the erection of the schools of which the plans had been approved. The motion was carried, one only voting against it.

The Dimensions of Class-rooms. — At the last meeting of the London School Board a long discussion took place as to what the dimensions of the new class-rooms should be. It was agreed that nine square feet should be allowed to each child, and that no class-room should be of less than 360 superficial feet. It was understood that this decision referred only to the three or four schools about to be constructed, and that the general question will be discussed at some future period.

ARCHITECTS' ACTIONS.

THOMPSON *v.* ALLISON.

ALLEGED BREACH OF CONTRACT.

THIS was an action (tried in Nisi Prius Court, Newcastle) brought by Mr. Matthew Thompson, of Newcastle, architect, to recover compensation for an alleged breach of contract entered into with Mr. W. H. Allison, a brewer, residing at Undercliffe, near Sunderland. Mr. Holker, Q.C. and Mr. Hugh Shield appeared on behalf of the plaintiff; while defendant was represented by Mr. Aspinwall, Q.C. and Mr. Crompton. According to the opening statement of Mr. Holker, it appeared that the plaintiff sought to recover damages from Mr. Allison for having failed to carry out an agreement concerning the erection of an hotel, and, as a consequence, for preventing him earning a considerable amount of remuneration. In the month of August, 1869, both parties to the suit met at the house of Mr. Charles Mark Palmer, Grinkle Hall, Yorkshire, and there got into conversation with respect to the erection of a large hotel on the Duke of Northumberland's property at Tynemouth. Mr. Allison said, "By the bye, have you not to do with the estate at Tynemouth belonging to the Duke of Northumberland? I suppose there will in time be large building operations going on there?" Plaintiff replied that he was connected with the property, and expressed his belief that in a short while there would be a very considerable number of houses built. Mr. Allison next asked if there was a hotel site to be obtained on the estate, and, on being told that there was, said, "Well, you know, if you could use your influence, and get me this site, of course I should employ you as architect." After plaintiff had promised to use his influence, and there had been something said as to the kind of building required, the conversation turned on the desirability of adding a ball-room to the defendant's residence at Undercliffe, and Mr. Thompson was asked to go over, view the premises, and then tell him what it would cost. This was all that occurred at Mr. Palmer's residence; but when Mr. Thompson returned to Newcastle, he saw Mr. Snowball, the Duke of Northumberland's commissioner, and obtained from that gentleman a site for the proposed hotel. The defendant was then communicated with, and, after several discussions, plans were ordered to be prepared for a second-class hotel, and Mr. Thompson was asked to solicit tenders for the building from several of the local contractors. The residence was also examined at Undercliffe, and plans proposed for the ball-room; but as the work

had never been agreed to be carried out, there was no charge made in the matter, except for the trouble attendant on the preparation of the designs. The erection of the hotel was, at Mr. Allison's request, allowed to stand over until the beginning of 1871, when Mr. Snowball began to request that the conveyance of land should be completed, in order that the duke might receive the money. On the 4th of March, however, when all was in readiness for a commencement, Mr. Allison made a request that a friend of his, Mr. Moore, should be engaged as an assistant to the building, in order to get experience in his profession under an old-established architect. This was agreed to, but as it transpired that Mr. Moore expected to be taken into partnership, Mr. Thompson declined to accept any such arrangement, and at once expressed his disapproval of the course which Mr. Allison had chosen to adopt towards him. After a good deal of correspondence on the subject, Mr. Allison requested plaintiff to send in his account for preparing plans, and also, on receiving payment, to put the plans themselves at his disposal; but, as Mr. Thompson objected to this method of getting the work done at a cheaper rate, and also knew that he would lose very considerably by being deprived of his per-centage on the building, he had been compelled to bring the present action, in order to secure his rights. The building was estimated to cost 4,500*l.*, and as an architect's fees were 5 per cent. on the outlay, or 2½ on the plans and 2½ on the work, the plaintiff now contended that he was entitled to a considerable sum as compensation for his lost commission. The examination of the plaintiff being concluded, Messrs. Kyle, Oliver, and Oswald, architects, were called in support of certain charges, and the propriety of the plaintiff's conduct in such a matter as the present. They also deemed it unusual for an architect to be dismissed in the manner alleged. After Mr. Holker had replied upon his case, and counsel for the other side had addressed the jury, his Lordship summed up, stating that plaintiff sought to recover a sum of money on two grounds,—first, with respect to wrongful dismissal, and, failing that, to recover for labour performed, asking, of course, to be assessed a proper sum for work done under the circumstances. There was no evidence of an engagement by contract up to the completion of the work, nor any evidence, indeed, of a contract to the effect that defendant would retain him in his employment. All the evidence they had of what agreement was made between the parties was from the plaintiff. The other witnesses of his case knew nothing of the circumstances of the case of their own knowledge, nor had they seen the defendant at all. Therefore they had only the simple testimony of the plaintiff as to the whole case. At the close of his lordship's remarks, the jury retired to consider their verdict, and, after a short absence, returned with a verdict for defendant, deciding that plaintiff was only entitled to the 65*l.* for work done, which had been paid into court.

WHO'S TO BLAME?

SIR,—The above question applies to many cases of neglect, both in the City of London and elsewhere. What I want to call attention to most is the disgraceful state that area gratings are allowed to get into. A short walk through any of the principal thoroughfares of the City will prove, in all cases where the gratings have been fixed any length of time, the stone has worn away, and leaves the caulking standing above the paving; and one of the worst cases can be seen opposite the London Tavern, Bishopsgate-street, where, a fortnight since, I had the misfortune to tumble over one of these traps. I have been disabled in my right hand ever since, and shall be some time before I recover the use of it again. I think a notice of this matter in your journal will save many a broken limb and perhaps life.

A VICTIM OF SOMEBODY'S NEGLECT.

DAMP-PROOF HOUSES.

THE most important question, how to form a damp-proof house, has occupied the attention of architects and others from time immemorial, and still the object is not accomplished. The evil consequences from damp houses it is impossible to estimate.

Money has been expended in the vain attempt to prevent this evil, and all to no purpose up to the present. There is an insurmountable barrier. The reason is, stone or brick is not suitable for building houses for human habitations, from their known tendency to absorb heat and moisture. These are the great destructive agents at work upon all the building materials now used,—heat, causing expansion of stone and brick, breaks the connexion betwixt the lime and the stone, and, although it may be imperceptible to the eye, still it is sufficient to drink in the beating rain during a storm. The capacity of most kinds of stone to receive by absorption a large quantity of water is well known; bricks are still more subject to this evil. I took six new bricks last week and weighed them when dry as accurately as possible; I then steeped them in water for three hours; during that time they absorbed 15¾ oz. each. Now, as it is known to be impossible to remove this natural evil from stone and brick, they are in consequence unfit for building a house, having all the conditions of health and comfort to its occupants, and having the capacity to receive they must have also the capacity to give out again. If this is so, what remedy have we? I say, none, unless we can change the nature of these materials. For ages past this has been the great battle, and has up to this moment defied the architect and the artist, as your useful columns will testify from first to last. The next question is, will architects and builders still persist in carrying on this hopeless and unequal contest? Is not the proof on all sides that they are defeated? As a last resource, they apply pitch, coal tar, metallic plasters, and a hundred nostrums; slate outside, and lath and plaster inside. At last we let the cat out, and let us ask, why not use *lath and plaster inside and out?* And why should we do this? Because it has not the capacity to receive these destructive agents, and, consequently, it cannot give them out again. I challenge any investigation that science can suggest in proof of this, and I can show specimens of buildings of lath and plaster in four counties and in the most exposed situations, that have withstood the most violent storms of wind and rain, and have, without exception, resisted all, without an inch of paper being injured or discoloured. Some of these houses have been without fires for months in winter, and may be left for years without fires, and will retain a purity of atmosphere no stone or brick house can have. In making these simple propositions, I know they will interfere with the interests of many; I know the opposition they will have to encounter, and I know also the principles involved in the whole system are so correct in practice as to set all cavil at defiance. I have no interest in this communication; I am neither architect nor more than an amateur builder; the only object I have in asking its insertion in your journal is to place within the reach of all a certain method for making a thoroughly damp-proof house.

J. W.

A REMEDY FOR DAMP WALLS.

SIR,—Observing in your columns a correspondence going on respecting "damp walls," and their cure, I would direct the attention of your correspondents, Mr. Sorby, "A. B.," and "A. J. B.," to a waterproofing solution, the most effective that I have yet met with. The manufacturers term it "Petrifying Liquid." It is made from a very curious species of silica lately discovered in Wales, in the basin of an extinct volcano, and which now forms the bed of a small lake. This deposit I saw referred to in your pages a week or two back. It is silica of the very richest quality, containing, when dry, over 90 per cent. of that mineral, and calcined to an impalpable powder, and snow white. The Silicate Paint Company of Liverpool, who have this deposit in their hands, use it as a base for their paints instead of lead, and a most beautiful glossy paint it makes, setting extremely hard, but the waterproofing solution is invaluable to builders or owners of property that is subject to damp.

I have used this "Petrifying Liquid" constantly for the last eighteen months, in its transparent and coloured state, and it does not matter whether the damp is driven in from the outside through the absorbency of the stone, brick, &c., or arises from the ground. I have found this solution to completely effect a cure, and at a very cheap rate, averaging from 2d. to 4d. per yard. I have also applied it to newly-plastered walls and papered on them immediately afterwards, and no sign of damp have I yet perceived.

It appears that this silica, being in such an extremely fine state of division, by this chemical liquid is conveyed into the pores of the stone, plaster, or brick, and combines with any moisture that is already in the wall, when exposure to the atmosphere for a few hours causes it to petrify and return to a flint again.

Plaster or brick that has perished it hardens in really a wonderful manner.

In this part of the country we have more then our share of moisture, and I have found the "Petrifying Liquid" the only permanent cure for dampness.

Liverpool. W. J. EDMONDS, Surveyor.

*** We have received a similar statement from Mr. C. Bennett, surveyor, Deptford; Mr. F. Griffiths, architect, Chester, and from other correspondents; and are thus led, in face of a wide-spread inquiry for some such material, to depart somewhat from our usual course and print the above communication.

A NUISANCE: WATERLOO BRIDGE.

SIR,—There was a growl from the Metropolitan Board of Works a little while ago that they were not allowed to frame by-laws for the management of the Thames Embankment. I wish to know, therefore, by whose obstructive permission that most offensive and abominable nuisance is kept up at the foot of the western (closed up) steps of Waterloo Bridge. It surely does not require any great stretch of ingenuity or cost to put a stop to it.

VIATOR.

ACCIDENTS.

Fall of a Building in Sheffield.—In West-street a stable at the rear of the Hallamshire Hotel has fallen. The outer wall of the stable joined the Portobello Steel Works, where an additional number of furnaces are about to be erected. In making the necessary excavations, the workmen had weakened the foundation of the stable wall, and the consequence was that it caved in. A horse, said to be worth between 30*l.* and 40*l.*, was inside the stable, and has sustained severe injuries.

Fatal Fall of a House at Frankfort.—A house in the Judengasse (Jews'-street), Frankfort, lately fell in, burying the inmates of it in the ruins. Up to the time when the telegram bringing this news was despatched, fourteen persons had been taken out, and nearly all of them were dead, and measures were being adopted to extricate others, though with great difficulty. The Judengasse is a street of quaint, picturesque houses, most of which are of great antiquity. Several of them have been pulled down.

PRICE OF IRON.

MESSRS. WILLIAM BIRD & Co., in their "Monthly Price Current," say,—"The advance in the price of iron has been so rapid and continuous that it is not surprising buyers should doubt if it can be permanently maintained. This distrust was first evidenced in the eagerness with which holders of stocks realised the opportunity for profits afforded by their ability to deliver promptly. The expectation of replacing sales from stock by the ordinary course of supply from makers at their convenience, and on lower terms, has, however, ended in disappointment. Whilst rise upon rise was declared in prices, and made, as it were, under protest, and accompanied by a kind of apology for its necessity, production and delivery were simultaneously limited by the want of raw material, and more especially of fuel. The present advance has not been the result of speculation, or of an artificially produced want, or by a combination amongst manufacturers, nor even for their special benefit. They are indeed acknowledged to be the first sufferers, for the delay in executing old orders for finished iron has left them with contracts in hand, which enhanced prices for labour and raw material render more or less unremunerative, and but few can as yet have been able to avail themselves to the full extent of current and profitable rates. The disturbed and altered conditions of the labour market gave the first impulse to the advance, and continue to render any immediate return to old prices highly improbable."

COMPETITIONS.

Middlesbrough Presbyterian Church.—The designs of Messrs. Ross & Lamb, architects, Darlington, have been selected in competition for the New England Presbyterian Church and Schools, to be erected in Middlesbrough.

Chapel at Howden.—The designs of Mr. W. Thompson, jun., architect, Hull, have been selected out of about seventy, by the trustees of the Primitive Methodist Chapel, Howden, for a new chapel in that town. Mr. F. N. Pettingell, London and Hull, and Mr. J. Wills, Kingsbridge, were second and third in the competition. The site of the chapel is in St. John-street.

Portland Water Supply.—An engineer writes,—"Can you inform me what has been the result of the competition for plans for the drainage and water supply of the Island of Portland, respecting which an advertisement on behalf of the local Board of Health appeared in your journal in July of last year? The plans and specifications asked for were forwarded, as required, on the 1st of September last. Six months have consequently elapsed, during which time no tidings have reached the competitors; and an application to the clerk to the Board for information has met with no reply.—ENGINEER."

BERLIN HOUSE OF PARLIAMENT COMPETITION.

IN reply to an inquirer, the designs (bearing the names of their authors) are to be delivered on the 16th of April next, at latest. The building is required to be monumental: sculpture and painting to be employed externally. Only sketches are desired, and these are to be publicly exhibited for four weeks before going to the jury for examination. The jury consists of four members of the council, and eight members chosen by the Diet. These members choose six architects and a sculptor for the tribunal of arbitration.

The members have selected for the tribunal of arbitration:—

As architects—Geheim Regierungsrath Hitzig, Berlin; Professor Lucae, Berlin; Professor Semper, Vienna; Professor Neureuther, Munich; Ober-Baurath Professor Schmidt, Vienna; Baurath Statz, Cologne. As sculptor—Professor Drake, Berlin.

For the design which, in the opinion of the jury, best solves the given problem, a First Prize of 1,000 Friedrichs d'or will be paid. Further prizes, each of 200 Friedrichs d'or, will be paid for the next four best designs.

The premiated designs are to become the property of the realm.

THE TRADES MOVEMENT.

London.—The chairman and secretary of the committee appointed by delegates representing the carpenters and joiners of the principal building firms in London have sent a memorial to the employers in accordance with a resolution of their constituents, asking the masters to concede to them a shortening of the hours of labour to fifty-one hours per week, with an advance of one penny per hour on wages, thus making the sum of 1*l.* 18*s.* 3*d.* for fifty-one hours' work, and respectfully requesting the employers to meet an equal number of men to draw up and arbitrate upon a code of working rules for the future guidance and better regulation of the trade. That six weeks' notice be given, dating from the 1st day of March, 1872, and that the above conditions come into operation on and after the 1st day of July, 1872.——Another old-established firm has acceded to the proposals of their workmen, for the benefit of the nine-hours movement; Messrs. Johnston, Brothers, Mediæval Metal Workers, of High Holborn, having at once agreed to the abbreviation of time, to date from the first week in March.——The workmen in the employ of Messrs. Strode & Co., the eminent gas-engineers

of Osnaburgh-street, Regent's Park, and St. Paul's Churchyard, having waited upon the firm requesting them to give them the benefit of the nine-hours system, they have readily granted the same, viz., that for the future the working week shall consist of 54 hours, the wages to remain as before.

Northampton.—A meeting of carpenters and joiners has been held in this town for the purpose of taking steps to ask the masters to concede the nine-hours movement and to adopt a new code of rules for the governance of those trades. The meeting was well attended, and was presided over by Mr. Pickering. There were also present Mr. E. Brimley and Mr. G. Pell, delegates from the amalgamated carpenters and joiners' society, and Mr. Thompkins and Mr. Green, delegates from the local society; the four forming delegates from the trades' council. The chairman denounced strikes as injurious to both employer and employed, and referred to the general concession of the nine-hours movement in all parts of the country. He advocated the principle of uniformity of labour, especially in the building trade, and requested the meeting to pass the rules which would be submitted to them. The rules were passed, and the 1st of April was fixed upon as the day on which it should be suggested that these rules come into operation.

York.—There has been a general strike made by the masons, joiners, and bricklayers connected with the York building trade, and as a consequence several hundreds of them are out of employment, besides a large number of labourers, who have nothing to do with the strike. The bricklayers have hitherto worked fifty-six hours per week for 29s. 2d. wages. They ask a reduction of hours to 50½, and the same wages as before. The masters offer to reduce the hours to fifty-three, or one hour less than nine hours a day. The joiners gave notice of their present action three months since. From fifty-six hours they demand a reduction to fifty hours, and an increase of wages at the rate of 6¾d. per hour instead of 3d. The masters offer to reduce to fifty-three hours, and to give 6⅜d. per hour. The masons have in the summer months worked fifty-six hours, at the rate of 6½d. per hour. They seek for a reduction of time to fifty hours and a half, and an increase of pay to the rate of 7¼d. per hour. The employers here also offer to reduce the hours to fifty-three. In the latter branch one or two of the smaller masters have given way to the men. The labourers, who have been thrown out of employment, have also met. They have been paid at the rate of 19s. 3d. a week, and they have resolved to demand a guinea, but not to go out upon it until May next. The masters in the mean time offer 19s. 10½d. per week, or an increase of 7½d., and a decrease of the hours of labour to fifty-three.

Cockermouth.—The masons and wallers of Cockermouth have made application to their masters to adopt the nine-hours system, and have threatened to turn out if the application be refused.

Bishop Auckland.—A meeting of joiners and carpenters now on strike has been held at Bishop Auckland, to bring the strike there, if possible, to a final settlement. Five out of seven of the masters have acceded to the fifty-three hours and 1s. more wages for the present, and 1s. more advance within two months from this date. The men agreed to adopt the present settlement, and to appoint four men to meet four of the masters within the time stated to settle the fifty-hours question; and if they cannot agree, each party to appoint an independent arbitrator, and accept his decision. Two shops remained out.

PUNISHMENT OF ADULTERATORS.

Apropos of a remark made in our last number, as to Mr. Muntz's new Bill and the analysts under a past Act, a Dublin correspondent calls our attention to what can be done under the Act of 1860. The Dublin corporation have summoned three milk-vendors before the police magistrates, and had them fined, merely for adulterating their milk with water, on the evidence of the city analyst, in the respective sums of 5*l.*, 3*l.*, and 2*l.*, besides being ordered to pay for public advertisements of their own names, addresses, and offences. Now if this can be done in Dublin, why can it not be done in London and elsewhere? Is not Dr. Letheby the City analyst for London? But was it not he who lately himself defended the adulteration of butter? In any new Act there must be clauses compelling the proper authorities to act, and not merely wait for complaints; and analysts ought to be obliged to do something in return for holding such an office. Perhaps they want sufficient motive power under the Act. They ought to be active and detective officers, doing nothing else than perpetually testing food and drink, unawares to tradesmen and merchants, and holding over the whole class therefore the salutary terrors of the risk of exposure, fine, and imprisonment, as a preventive of the unmeasured rascality which now prevails amongst them.

AN AMBITIOUS RAILWAY COMPANY.

Amongst the several projects for railway extensions which will come before Parliament in the course of the present session, one is a Bill promoted by the Mersey Railway Company at Liverpool. Last year this company obtained powers for the construction of a submarine railway under the Mersey between the Liverpool and Birkenhead shores, and they are now applying for additional powers, which include the extension of their line from the Mersey, underground, into the centre of Liverpool. In their Bill they seek Parliamentary sanction for the purchase of several properties in the neighbourhood of the Exchange, and amongst other buildings which they have scheduled with the intention of absorbing for the purposes of their undertaking is the town-hall, situated immediately adjacent to the new exchange, of which it is one side of a quadrangle and square formed by the two buildings. The corporation are unwilling that their municipal temple, under the roof of which royalty, ministers of state, and other distinguished magnates have been entertained, should be demolished, or converted into railway booking offices, and they have just decided to oppose the railway company's Bill before Parliament in consequence of the introduction of the obnoxious clause.

DRAINAGE OF WINDSOR.

The Windsor Board of Health are still in difficulty in respect to the drainage question. A few years ago it was proposed to establish a sewage farm at Horton, but after some discussion the plan was considered too expensive, and it was not carried out. Then Mr. Dover's process was adopted, and negotiations were carried on between the Board and that gentleman for a considerable time, but to no purpose; and now the Board have turned their attention to the A B C scheme, but we understand it is not likely to meet with favour, and the site for the proposed works is not happily placed. It appears by a letter published in the *Windsor and Eton Express*, of the 17th ult., from Mr. Harkness, C.E., of Victoria-street, Westminster, that six years ago he proposed a plan for collecting all the drainage of Windsor, Eton, Slough, and Windsor Castle to a central point on the banks of the river Thames by gravitation and pumping it to Chobham, Finchley, or Bagshot, where suitable land could be purchased at a moderate price for a sewage farm. The cost of carrying out this plan amounted to 60,000*l.*, to be apportioned among the three towns and the Castle.

THE SEWAGE QUESTION AT LEEDS.

At a recent meeting of the Leeds Town Council, the town clerk read a report on the utilisation of sewage, which had been presented by a sub-committee of the Streets and Sewerage Committee. This document stated that the "A B C" system of works had been in operation since January 9th. The sub-committee had had the effluent water analysed, and, on the assumption that the "A B C" process would render the effluent water so pure that it might "flow into the river Aire without causing a nuisance, or becoming injurious to public health," called the attention of the committee to the immediate necessity of at once asking the Council for the requisite authority to proceed to the full completion of the scheme. 30,000*l.* had been expended on the land and in the erection of works for the purpose of experimenting on 2,000,000 gallons of sewage per day. Alderman Tatham proposed a resolution to that effect, and said he "hoped the Council would not go into the question as to what might be a better system of dealing with the sewage than that which they had taken up, because, if there were superior modes, they would not avail them now in meeting the difficulty in which the riparian owners had placed them."

Mr. Mosley moved as an amendment,—

"That the Government Medical Board be requested to send an agent to Leeds, to test our sewage water after leaving the tank of the A B C system, in order to ascertain if it is so far purified as to be admissible into the river before the Council grants any sums of money to extend the sewage utilisation scheme."

Alderman Joy estimated that it would take 50,000*l.* per year to work the "A B C" system so as to deal with the whole of the sewage of Leeds, and said they were not justified in committing themselves to such an enormous expenditure on so doubtful a scheme. After some discussion, however, the amendments were defeated, and the original resolution was adopted.

It has been arranged before Vice-Chancellor Bacon that there shall be an extension of time for one year under the injunction against the Corporation of Leeds, restraining them from discharging the sewage of the borough into the river Aire, the Corporation undertaking to purchase fifteen acres of land, or obtain compulsory powers to purchase the same next session, for the erection of works for the disposal of the sewage.

EDINBURGH ARCHITECTURAL ASSOCIATION.

The usual fortnightly meeting of this Association was held on February 28th, in the hall, 5, St. Andrew's-square; Mr. Hippolyte J. Blanc, president, in the chair.

The second part of a paper on "House-drains and Plumber Work" was read by Mr. John Paterson, architect. To secure a perfect system of drains and appliances, Mr. Paterson urged it was necessary to trap all rain-water pipes, and have an air-vent in all house-drains. He pointed out where flaws in the arrangement were most likely to occur in consequence of defective construction or decay of the soil and waste pipes by corrosion. Although the necessity for air-pipes was well known, it was astonishing how seldom they were found where they ought to be. He recommended an independent stalk of air-pipes, to which a branch from every trap should be joined. This would not only prevent the trap being emptied by suction, but would ventilate the whole of the soil and waste pipes, and thereby render them less liable to be destroyed by the noxious air. He condemned the practice of fitting up cisterns beside water-closets, as was commonly done in flatted houses. Where this could not be avoided, water-tight covers should be provided for the cisterns.

OUR ENGINEER OFFICERS.

Sir,—An extract from [illegible]en's *Indian Mail*, quoted in the *Times* of th[illegible] 9th ult., clearly shows that the recent surpr[illegible]g failures which have taken place in the Gove[illegible]ment buildings in India, are really due "less to native rascality than to our own officers' ignorance." This is a notable discovery, after the great amount of "bouncing" we are accustomed to hear when allusion is made to the scientific education of engineer officers.

Some forty years ago Colonel Pasley made great and praiseworthy efforts to improve the education of our engineering cadets, especially as regards the arts of construction, with what results we now see.

Might I be permitted humbly to suggest to our young prince (whose restoration to health is causing delight from the palace to the cottage), that he might, with great advantage to the country, engage the first fruits of his convalescence in prosecuting a few stern, searching inquiries into the causes which are diverting the attention, and undermining the efficiency of our Engineers, both officers and men.

We know not how soon the enemy may be at our gates; let us not be, like Nero, caught fiddling.

Suum Cuique.

THE PROPOSED CHANNEL TUNNEL.

Strong endeavours are being made to raise subscriptions to the 30,000*l.* fund for cutting a drift-way under the Channel. We hear that about 10,000*l.* have already been subscribed; and amongst the most prominent contributors are the Duke of Sutherland, 200*l.*; Mr. Thomas Brassey, M.P., 1,000*l.*; Lord Richard Grosvenor M.P., 500*l.*; Marquis of Westminster, 200*l.*; Lord Delamere, 200*l.*; Mr. E. Blount, C.B.,

200*l.*; Mr. Albert Grant, 300*l.*; Mr. A. Joy, 400*l.*; Mr. Pender, 200*l.*; Sir R. Wallace, 200*l.*; Sir W. Jackson, 200*l.*; Sir Watkin Wynn, bart., M.P., 200*l.*; and Sir E. Buckley, bart.; Admiral George Elliot; Captain Beaumont, R.E., M.P.; Sir R. A. Cunliffe, bart.; &c.——A correspondent, commenting on Mr. Morant's letter, in our pages, urges that the tunnel may be made in the "Gault." The writer ridicules the notion of attempting it in the lower chalk.——Another correspondent insists upon Dungeness and Andreçelles being the proper termini for the tunnel. "For the furtherance of the tunnel scheme, I boldly say that at Dungeness may be found the following advantages over any other locality which has been suggested,—viz., a soil of clay, a splendid level approach to the shore, a beach superbly adapted for the construction of the necessary air-shaft, lighthouse, &c., called 'Le Colbart,' exactly half-way across, where at low spring tides there are only about two fathoms of water, and, what is, I believe, one of the greatest desiderata, a very excellent material on the spot for building of all kinds."

SIR,—A letter appeared in your journal recently signed "A. W. Morant," in which that gentleman gave as his opinion, that the construction of the above great scheme was next to an impossibility; and to bear out this assertion he mentioned some of the difficulties he encountered as engineer to the Norwich intercepting sewers. Now, sir, being not only a firm believer in the possibility, but likewise in the practicability, of the grand submarine work, I should, with your permission, like to ask Mr. Morant the following questions.

Did he employ sufficient power for pumping out the large bodies of water met with? Did he have duplicate engines and pumps in cases of breakdowns, which do and will occur where machinery is worked day and night without intermission? And, lastly, did he keep the brickwork well up to the face of the mining?

Unless these precautions were taken (from his own statement I imagine they were not), it must have proved fatal to the works. How is it possible, then, for Mr. Morant to argue from analogy on such a gigantic undertaking as the proposed tunnel at Dover from his experience at Norwich?

A PRACTICAL ENGINEER.

SIR,—Mr. Alfred W. Morant states in a letter in the *Builder* of the 24th ult., that the proposed tunnel is to be made "in the *upper* chalk," notwithstanding that I assured you, in reply to the article in the *Builder* of January 27th, printed in your issue of the 10th ult., that the proposed tunnel would be made in the *lower* chalk, and that it was because it could be made there in the lower chalk the proposed site for it had been selected. Will you allow me to reiterate this?*

Permit me to add, that there are already some hundreds of miles of "tunnels" (colliery and lead-mine workings) under the sea, and that therefore the proposed tunnel is neither so novel nor so extraordinary or hazardous an undertaking as some would make the world believe. If there were coal or lead to be sought for in mid-channel, it would have been driven to long ago, without fuss or wonder.

THE SECRETARY OF THE COMPANY.

Miscellanea.

The Artizans', Labourers', and General Dwellings Company, Limited.—The fifth annual meeting of the shareholders of this company was held on Saturday, at 1, Great College-street, Westminster, Mr. J. Baxter Langley, chairman of the company, presiding. There was a good attendance. This company possesses in various towns houses which are rented, and ultimately to be owned, by the working-class tenants. The report stated that the amount of share capital is now 18,580*l.*, showing an increment during the year of 12,580*l.* The uncalled capital is 22,000*l.* The directors proposed a dividend of 6 per cent. on share capital, and 5 per cent. on deposits, leaving a balance of 284*l.* 8s. 1½d. to be carried forward to the reserve fund. The shareholders who have recently joined include peers, members of Parliament, merchants, and others of the higher and middle classes of society, as well as many working men. One of the objects of the company is to direct operations more particularly to some of those large centres of populations where overcrowding is notorious, and where the laws of sanitary science, so far as they relate to the construction, ventilation, and improvement of workmen's dwellings, appear to be altogether ignored. The report was adopted, and the dividend declared.

The Polytechnic.—The directors of the Royal Polytechnic have purchased Messrs. Bryceson's Electric Organ, which has been for some considerable time on view in their theatre. Duplicate key-boards are to be placed in the Great Hall, with a cable connecting the organ in its original position, and in no way interfering with the key-boards in *front* of the stage in the theatre.

* Mr. Morant's letter was written before the appearance of the communication referred to.—ED.

The Hallington Reservoir of the Newcastle Waterworks.—The directors of the Newcastle and Gateshead Water Company state in their twenty-seventh annual report, that the new reservoir at Hallington, which has been in progress since August, 1869, is now practically completed. The reservoir was estimated to contain about 600 millions of gallons; the contents, however, are found to exceed this by 85 millions, the true quantity being 685 millions. At the present moment there are in store 540 millions, and this quantity is daily increasing. The water at present in store, taking old and new reservoirs together, is 1,070 millions of gallons, which, when Hallington is full, will be further augmented to 1,200 millions. The directors express their satisfaction with the skill and attention displayed by Mr. Bateman, their engineer, and his staff. Credit is also due to Mr. J. B. McGuire, the contractor, for the manner in which he is said to have carried out the works, and managed the men employed thereon for the last three years. There has not been a single case of misconduct with the workmen; no strikes, riots, nor even a case of poaching. The workmen lived in huts or temporary dwellings.

Oxford Architectural and Historical Society.—On Tuesday evening before last, this Society held a meeting in the large room of the Ashmolean Museum, which was fairly attended. The Rev. the President of Trinity occupied the chair. The chairman called on Mr. J. P. Earwaker, of Merton, to speak on "the most important archæological discoveries during the past year in the neighbourhood." After which Mr. James Parker gave an account of the Garford Barrow, near Abingdon, which had lately been opened under his supervision, illustrated with maps, plans, views, &c. Nothing was found in the barrow which did not appear anterior to the Roman occupation, but in a field near, a vast amount of Roman pottery was found, which all pointed to the third century. Professor Rolleston did not quite agree with Mr. Parker. The urn found in the barrow appeared to him clearly of the Saxon type, as whenever an urn of that shape had been found containing burnt bones it was always Saxon.

The Electric Light.—Writing to the *Standard*, Mrs. Mary Staite, in reference to the inauguration of the electric light at the South Foreland Lighthouse recently, says that her husband, the late William Edward Staite, was the originator and patentee of the application of electricity to lighting purposes, and that at the time of his death, in 1854, he had so improved upon it as to produce a powerful light, which was pronounced by scientific men perfect for all practical purposes. He held patents for this country, America, and several places on the Continent. Exhibitions were given from time to time in several of the chief towns of England, including London, Manchester, and Liverpool. Mr. Staite also had the honour of exhibiting his light twice by command to her Majesty the Queen and the late Prince Consort. A tower was erected by the Liverpool Dock committee, where the light was tested for a considerable time, and there was reason to believe it would have been permanently adopted in Liverpool had not Mr. Staite's death put a stop to all further proceedings at that time.

Not to Every One his Own.—Mr. W. Cave Thomas has before now seen his proposals taken up and carried out by others. It is happening to him now in respect of army organisation. Mr. Thomas's proposal, first roughly sketched in the *Pall Mall Gazette* of 1867, and further developed in a lecture at the Royal United Service Institution, before Sir William Codrington, March 12th, 1869, was to divide the country into military districts, and localise recruiting; also to establish the head-quarters of the depôt battalion, military schools, exercising grounds and military workshops in one spot, and that a strategic one if possible. It was a scheme, in fact, as stated by its author, calculated to remedy the want of unity, to give more stability to our whole military system, and more organically to unite the army, militia, and volunteers. His lecture also detailed the organisation of his proposed district military schools, which, as he thought, would perfect the voluntary system of enlistment.

Architects' Benevolent Society.—The annual meeting of this excellent society will be held in the Rooms of the Royal Institute of Architects, 9, Conduit-street, on Wednesday next.

The Palestine Exploration Fund.—The annual meeting of the Dover Branch of this Society has been held in the hall of the Dover College, recently inaugurated by Earl Granville, which was filled with a company including the *élite* of the town and neighbourhood. Prince Arthur presided, and with several brief but appropriate and graceful speeches introduced Captain Wilson, Captain Warren, and Mr. Morrison, one after another to the meeting. His Royal Highness also said:—"My duty is to draw your attention to the object of the meeting, and to ask you kindly to assist the funds for the exploration of Palestine. I believe that not more than 10,000*l.* are required adequately to complete this praiseworthy and admirable work; but surely such a sum ought easily to be collected in a wealthy country like our own—a country which ought to, and always does, take the lead in all matters connected with the Bible."

Cost of the Lambeth New Workhouse.—The new workhouse for the Lambeth Union, in Kennington-lane, which has now been some time in course of erection, has already cost a very large amount, although not yet finished, and the ratepayers have evinced much dissatisfaction at the expenditure which has up to the present time been incurred. In addition, however, to the sum already expended, a further contract, amounting to over 3,200*l.*, has just been entered into, and the works commenced. These works are the erection of a laundry, kitchen, and bake-house machinery and fittings, in still further extension of the building. The contract includes all incidental builders' work which may be required in the additional premises. The contractors for the work are Messrs. Benham.

The Reclaimed Land on the Victoria Embankment.—A special meeting of the Metropolitan Board of Works has been held, to consider a letter from the Office of Woods and Forests as to the land reclaimed in connexion with the Victoria Embankment, and submitting the following proposition:—

"The Crown to sell the two acres of land to the Board for such a sum as shall represent the estimated loss which will be sustained by the Crown and the public at large if the proposition in the report of the Select Committee as to the dedication of the land in question as a public garden is adopted, in lieu of the proposed appropriation. The amount to be paid to be settled by arbitration."

Mr. Newton said the Board could not agree to this proposition; they were willing to negotiate on the basis of the report of the Select Committee (which proposed that the Board should rent the ground, 2½ acres, for a garden). After some discussion, it was decided that the proposal of Mr. Gore be not entertained.

Metropolitan Improvements and Houses for the Working Classes.—It is tolerably well understood that the constant improvements in the metropolis necessarily involve the destruction of large numbers of houses occupied by the working classes, and the Hampstead vestry appears to be of opinion that the Metropolitan Board, in carrying them out, should obtain Parliamentary powers for providing house accommodation for the working classes dispossessed by such improvements. A communication from the vestry to this effect was last week forwarded to the Metropolitan Board.

The Roads round St. Paul's.—A discussion took place at the meeting of the City Commissioners of Sewers, on Wednesday, as to the desirability of widening the western portion of St. Paul's Churchyard, by setting back the railings. A sum of 15,000*l.* had been offered for the land required, but no definite answer has been received. It was said that the Cathedral authorities positively decline to allow of the widening of the roadway on the north side; and ultimately the Improvement Committee were instructed to bring up a report detailing all the proceedings in the matter which have lately been taken.

Movement among Farm Labourers.—A class of very hard-worked, ill-paid, and ill-fed labourers,—the agricultural,—are now fairly on the move in the north of England, in an endeavour to obtain increased wages and shorter hours. Numerous meetings are being held at Morpeth, Newcastle, Prudhoe, Walton, Driffield, &c.

Institution of Surveyors.—The next meeting will be held on Monday evening, March 11th, when the discussion on Mr. Smith's paper, entitled "Land," will be resumed.

The late Frauds on the Birmingham Gas Company.—At an extraordinary meeting of the Birmingham Gas Company, held to receive the report of the Investigation Committee to inquire into the defalcations of the late secretary, the report disclosed an incredible amount of neglect on the part of the directors, by which the company had been exposed for years past to heavy losses, arising from want of management. The total amount of the defalcations of the officials is estimated at 40,000*l.*; the late secretary, Joseph Harrison, who has absconded, being responsible for nearly the whole of this amount.

Addition to Leith Hospital.—The directors of the Leith Hospital having just received 20,000*l.*, as part of a legacy bequeathed to them by the late Mr. T. W. Ramsay, of London, lately a merchant in Leith, they have resolved to apply the funds in carrying out an important addition to the institution. A new hospital is to be wholly set apart for the administrative department and for casual cases of illness; and when it shall have been completed, the present building will be used exclusively for infectious diseases.

Metropolitan Street Improvements Bill. On the order for the second reading of this Bill, Mr. Pell moved (in the House of Commons) the postponement of the second readihg for six months. The amendment, however, was withdrawn, and the Bill was read a second time. Mr. J. H. Palmer then moved that it should be referred to a Select Committee of ten members, of whom five should be nominated by the House, and five by the Committee of Selection; but the House decided by a majority of 170 against 122 against this motion.

The Metropolitan Water-Supply.—It has been resolved by the St. James's Vestry to instruct their medical officer of health (Dr. Lankester) to call the attention of the different waterworks companies to the impure state of the water supplied by them. It has also been decided to petition the House of Commons to give the Metropolitan Board of Works powers to enforce on the various waterworks companies a pure and ample supply of water.

Architecture and the International Exhibition.—We would remind intending exhibitors that the date on which architectural drawings, designs, and models will be received at the International Exhibition (east goods entrance), is fixed for March 11th. Architectural drawings will be exhibited in the east quadrant, now in course of preparation; in order to obtain a favourable light they will be hung on screens, placed at right angles to the windows.

Vienna Palace of Industry. — Messrs. Clark & Co. have signed a contract at Vienna with the Imperial Commissioners to fix their patent steel shutters to all the entrances, &c., of the Palace of Industry, now rapidly approaching completion, in the ground of the Prater, in that city. There are upwards of 300 entrances and windows, measuring over 30,000 superficial feet.

New Town-hall, Sherborne.—We understand the committee recently appointed at a meeting of the inhabitants of Sherborne have seen Mr. Digby, who has expressed himself favourable to the movement, and plans in accordance with the object in view will shortly be laid before him by Mr. T. Farrall, architect.

Catholic Schools, Hatton Wall.—On Tuesday, the memorial stone of St. Peter's Schools, attached to the Italian Church, Hatton-wall, was laid by the Countess Tasker, who subscribed 500*l.* towards their construction. The cost of the structure is estimated at 1,250*l.* The architect is Mr. J. N. Tasker, and the builder is Mr. G. Leggett.

The Treatment of Stone.—Under this head a patent has been taken out by C. Douglas, Glasgow, and D. M. Watson, Dundee. The invention consists in first applying to the surface of the material as a wash a solution containing resin or colophony and an alkali, and then, before this first wash dries, applying a solution of alum.

"The Railway Interest."—The statistics we gave under this heading (p. 153) are from a lecture "On Railways," delivered by Mr. Crosbie Dawson, C.E., at the Nuneaton Institute.

New Railway Station, York.—We understand that the works in connexion with the formation of the new railway station at York will shortly be commenced.

The Thames Sewerage Commission.—The promoters have determined to withdraw the Bill for this session; but with the intention of making a renewed application to Parliament next session, by which time the views and wishes of each parish, and other interests affected, may be ascertained and provided for.

Buildings for Sound.—We understand that Messrs. Weiggand & Co., of La Hogue, propose to show in the approaching International Exhibition a kiosk, described as "the music temple in its full power of propagating the undulation of sound," and which appears to possess many peculiar properties.

The Roadway in Cornhill.—The paved roadway in Cornhill, partly of stone, and, more easterly, of wood, is miserably out of repair, and makes a journey along that important thoroughfare a dislocating misery. The whole is so singularly bad that we should like to know when it was done, and who did it.

TENDERS

For additions and alterations to Watford Union Workhouse, Herts. Mr. Arthur Allom, architect. Quantities by Mr. Bagg:—

Allen	£10,600	0	0
Wright, Brothers, & Goodchild	9,375	0	0
Sharpington & Cole	9,220	0	0
Bentley	9,175	0	0
Jarrett	9,060	0	0
Coles	8,570	0	0
Brown	8,500	0	0
Saut	8,488	0	0
Blackmore & Morley	8,292	0	0
Holland	8,100	0	0
G. & J. Waterman	7,948	0	0
Chadwick*	6,838	0	0

* Error of 1,000*l.*; withdrawn.

For erecting eight villa residences in Leamington-road and Horn-lane, East Acton. Mr. John B. Badock, architect. Quantities supplied:—

Tyler	£6,731	8	0
Cook	6,700	0	0
Gough	6,450	0	0
Sawyer	6,353	0	0
Stephens & Co.	5,629	0	0
Blackmore & Morley	5,622	0	0
Crook & Wall	5,500	0	0
Rankin	5,500	0	0
King & Co.	5,340	0	0
Johnson	5,279	0	0
Stegg & Long	4,880	0	0
Blick	4,850	0	0
Preedy & Son (accepted)	4,800	0	0

For erecting four villa residences in Leamington-road, East Acton. Mr. John B. Badock, architect. Quantities supplied:—

Sawyer	£3,353	0	0
Tyler	2,977	14	0
Stephens & Co.	2,893	0	0
Blackmore & Morley	2,860	0	0
Gough	2,840	0	0
Johnson	2,779	0	0
Rankin	2,750	0	0
Crook & Wall	2,750	0	0
Preedy & Son	2,750	0	0
Stegg & Long	2,660	0	0
Cook	2,500	0	0
Blick	2,325	0	0
King & Co.	2,217	0	0

For additions to the Hayes, near Stone, Stafford, for Mr. George Meakin. Messrs. R. Scrivener & Son, architects:—

Turner	£2,850	0	0
Sutton & Meadon	2,701	0	0
Barlow	2,680	0	0
Ratcliffe	2,530	0	0
Whittome	2,527	0	0
Cooke	2,516	0	0
Matthews	2,475	0	0
Brindley & Critchlow	2,400	0	0
Freakley	2,200	0	0
Inskip, Brothers (accepted)	2,186	0	0

For six cottages, in Crown-street, Brighton. Mr. W. Edridge, architect:—

Barnes	£1,370	0	0
Blackmore & Howard	1,350	0	0
Holloway & Son	1,240	0	0
Lockyer	1,100	0	0
Reynolds (accepted)	910	0	0

For the erection of a warehouse in Curtain-road, Shoreditch, for Messrs. S. Moss & Sons. Mr. Lewis H. Isaacs, architect. Quantities by Mr. L. C. Riddett:—

Patman & Fotheringham	£1,260	0	0
Chessum	1,260	0	0
King & Son	1,232	0	0
Elkington	1,205	0	0
Killby (accepted)	1,150	0	0

For the laying of 5,588 feet run of stoneware pipe sewers, and other works, in the town of Uppingham, for the Uppingham sewer authority. Messrs. Whitaker & Perrett, engineers:—

Stevens	£1,105	0	0½
Fast	1,030	0	0
Lea	900	0	0
Ridley	887	0	0
Streeton	826	0	0
Acock	800	0	0
Morris	777	0	0
Deane	756	0	0
Donaby	735	0	0
Childs	706	0	0
Freeman	680	0	0
Walker (accepted)	596	0	0½

For building a pianoforte manufactory, King-street, Camden-town, for Messrs. Monington & Weston. Mr. J. Pennington, architect. Quantities supplied:—

Walton	£1,050	0	0
Nutt & Co.	1,023	0	0
Kelly, Brothers	1,023	0	0
Mann	1,013	0	0
Scrivener & White	997	0	0
Mildwater (accepted)	975	0	0

For curate's house, at Kenley. Mr. R. Martin, architect:—

Taylor & Son	£996	10	3
Simons	887	0	0
Jarrett*	864	0	0
Smethurst*	835	0	0
Scrivener	785	0	0
Saker*	775	0	0
Ward	748	0	0

* Quantities supplied by Mr. F. Sparrow.

For alterations and additions to "Bedford Arms," Clapham, for Messrs. Whitbread & Co. Quantities not supplied:—

	House and Fittings.			Stables.		
Henshaw	£985	0	0	£630	0	0
Axford	866	0	0	570	0	0
Bridgman, Nuthall, & West	846	0	0	565	0	0
Hockley	818	0	0	455	0	0

For building vicarage-house for St. Michael's, Chester-square, S.W. Mr. R. J. Withers, architect. Quantities by Mr. Poland:—

Rider & Son	£3,120	0	0
Brass	2,965	0	0
Higgs	2,958	0	0
Sharpington & Cole	2,797	0	0
Perry & Co.	2,750	0	0
Henshaw & Co.	2,740	0	0
Adamson & Sons (accepted)	2,667	0	0

For the erection of new school at Stepney; and alterations to existing house, for the trustees of the Stepney Jewish Schools. Messrs. Davis & Emanuel, architects. Quantities supplied by Mr. Henry P. Foster:—

Myers & Son	£1,600	0	0
Williams & Son	1,535	0	0
Temple & Forster	1,535	0	0
Lemon	1,520	0	0
Ennor	1,466	0	0
King & Son	1,440	0	0

For the erection of a warehouse in Victoria-street, Bristol, for Mr. Joseph Birtwell, iron merchant and founder. Mr. H. Masters, architect:—

Kingstone	£1,590	0	0
Wilkins & Sons	1,375	6	0
Church & Phillips	1,350	0	0
Escott	1,325	9	8
Norris	1,248	0	0
Diment	1,225	0	0
Robertson	1,100	0	0
Ford & Summers (accepted)	1,031	16	6

For rebuilding drug-mill and stabling, at Beddington-corner, recently destroyed by fire, for Mrs. Aitken. Mr. R. W. Price, architect. Quantities by Mr. W. H. Barber:—

Smith	£897	0	0
Buck	858	0	0
Patman & Fotheringham	795	0	0
Jarratt	768	0	0
Tyerman	760	0	0
Coleman (accepted)	749	0	0

For additions to Crescent House, Brompton, for Col. Aikman. Messrs. Lansdowne & Pollard, architects:—

Bird	£493	0	0
Scrivener & White	478	0	0
Patman & Fotheringham	415	0	0
Stimpson & Co. (accepted)	404	0	0

For alterations and additions to Edmonton Union. Mr. T. E. Knightley, architect. Quantities by Messrs. Arding & Bond:—

Field & Sons	£3,450	0	0
Rivett	3,333	0	0
Wood & Son	3,300	0	0
Eaton & Chapman	3,297	0	0
Patman, Brothers	3,295	0	0
Howard	3,160	0	0
Rose & Brown	3,007	0	0
Leatherdale	2,983	0	0
Pocock	2,975	0	0
Cullum	2,897	0	0
Nightingale	2,894	0	0
Linzel	2,893	0	0
Cook & Green	2,832	0	0
Bays & Co.	2,825	0	0
Vaughan	2,789	0	0
Burtly	2,753	0	0

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TO BUILDERS and CONTRACTORS.—TENDERS wanted for COMPLETING a PAIR of VILLAS, at Colby-road, Gipsy-hill, Norwood. Specifications and particulars at Mr. MAY'S, Acorn-wharf, Old Kent-road. Tenders to be sent in on or before the 16th inst. The owner does not bind himself to accept the lowest or any Tender.

TO HOT-WATER ENGINEERS.—WANTED, ESTIMATES for HEATING with HOT WATER numerous Suites of OFFICES, to Four Stories of a large Building situate in Manchester. — Apply to Messrs. MANGNALL & LITTLEWOOD, Architects, 3, Norfolk-street, Manchester, giving references to similar buildings in London or elsewhere heated in a similar manner.

SOUTH-EASTERN RAILWAY COMPANY.—BRANCH RAILWAY from WESTERNHANGER to HYTHE and SHORNCLIFFE.—The Directors are prepared to receive TENDERS for the CONSTRUCTION of this BRANCH, about 3¼ miles in length. Plans and sections can be seen, on and after the 14th inst. at the Office of the Company's Engineer, Mr. FRANCIS BRADY, No. 5, St. Thomas's-street, Southwark, S.E. after obtaining an order for inspection from the undersigned. Tenders to be sent in not later than TEN o'clock on THURSDAY, the 28th inst.—By order,
JOHN SHAW, Secretary.
London Bridge Station, March 7, 1872.

TO DUST CONTRACTORS.—PARISH of CHELSEA.—The Vestry of the Parish will meet at the Vestry-hall, King's-road, on TUESDAY, the 19th day of MARCH, instant, at THREE o'clock in the afternoon, to consider TENDERS from persons willing to contract according to the terms and conditions of a specification (a printed copy of which may be had on application to the Vestry Clerk) for COLLECTING and REMOVING the DUST, ASHES, FILTH, and RUBBISH from the houses and other places within this parish, during the period commencing the 29th day of March, 1872, and ending on the 25th day of March, 1873, both days inclusive. The drafts of contract deeds to be entered into for carrying out the terms of the specification must be inspected, and are now lying for inspection at the Offices of the Vestry. Parties Tendering must appear personally at the time the Tenders are opened, and not less than one-fourth of the sum offered is to be paid on the acceptance of the Tender, and the remainder as provided in the said draft contract deeds. The contract deed or deeds will be prepared at the expense of the Vestry. The Tenders are to be upon printed forms, which, with further particulars, may be obtained at this Office. The Tenders are to be delivered, sealed, addressed "To the Vestry of the Parish of Chelsea," and endorsed "Tender for Removal of Dust," &c. by or before TWELVE o'clock on the said 19th MARCH inst. Each person Tendering is required to bring (but not to enclose) a Bank Note, value 10*l.* with his Tender as a guarantee of good faith, which said Bank note will be returned should the Tender not be accepted. The notes brought with Tenders subsequently accepted will be retained until the contract deeds are duly executed, or until the contracts are otherwise completed.—By order,
CHARLES LAHEE, Vestry Clerk.
Vestry-hall, King's-road, Chelsea, S.W. 7th March, 1872.

TO BUILDERS.—Mr. JAMES desires to CONTRACT for ADDITIONS and ALTERATIONS to his PREMISES, PENTON HALL, Penton-street, Pentonville-road, where the drawings and specification may be seen, between ELEVEN and FIVE any day except Friday and Saturday.

KESWICK, CUMBERLAND.—Builders desirous of TENDERING for the ERECTION of a MANSION, at Lingholm, Keswick, for Colonel Greenall, are requested to send their names and addresses to the undersigned, on or before MONDAY, the 18th instant.—ALFRED WATERHOUSE, Architect.
20, New Cavendish-street, London, W. March 7, 1872.

CAMBRIDGE.—Builders desirous of TENDERING for the ERECTION of a new BLOCK of Undergraduates' Rooms, in connexion with Trinity Hall, Cambridge, are requested to send their names and addresses to the undersigned, on or before MONDAY, 18th inst.—A. WATERHOUSE, Architect.
20, New Cavendish-street, London, W. March 7, 1872.

TO CONTRACTORS. — Builders desirous of TENDERING for the ERECTION of NEW BUSINESS PREMISES in the Market-place, Reading, for Messrs. Sutton & Sons, are requested to send their names to us for approval before the 16th instant.
None but first-class firms need apply. Messrs. Sutton & Sons do not bind themselves to accept the lowest or any Tender.
WM. & J. T. BROWN, Architects.
Reading, March 5th, 1872.

RUABON WATER COMPANY.—CONTRACT No. 4.—The Directors are prepared to receive TENDERS for the CONSTRUCTION of a SERVICE RESERVOIR, at Pen-y-cae, near Ruabon.
Plans and specifications may be seen, and Forms of Tender obtained at the Office of Mr. HENRY DENNIS, Hafod-y-bwch, Engineer to the Company, on and after THURSDAY, the 7th inst.
Sealed Tenders, endorsed "Tender for Reservoir," to be sent to me on or before THURSDAY, the 21st inst.
The Directors do not bind themselves to accept the lowest or any Tender.
GEO. E. WOODFORD, Secretary.
Ruabon Water Company's Offices, Rhos, Ruabon, March 1st 1872.

TO BUILDERS.—Trinity House, London, E.C. March 7, 1872.—This Corporation being desirous of obtaining TENDERS for the CONSTRUCTION of a NEW TOWER, and ADDITIONS to DWELLINGS, at Lowestoft High Lighthouse, hereby give notice, that the plans and specifications may be inspected, and specifications and forms of Tender obtained, on application at this House, and at the Lowestoft High Lighthouse, on any day between the hours of TEN a.m. and FOUR p.m. Tenders, sealed, and marked outside, "Tender for New Tower, &c. at Lowestoft High Lighthouse," must be addressed to the Secretary, and delivered at this House, on or before MONDAY, 1st of APRIL next; and no Tender can be entertained that is not made on the form provided. The Corporation do not pledge themselves to accept the lowest or any Tender.—By order,
(Signed) ROBIN ALLEN, Secretary.

ST. LUKE, MIDDLESEX.—To BUILDERS.—TENDERS are required for the ERECTION of a BLOCK of ALMSHOUSES on a site in Bath-street, St. Luke's, for the Guardians of the Poor of the Parish of St. Luke, Middlesex. Plans and specification may be seen on and after THURSDAY, the 14th inst. and a copy of the bills of quantities obtained on application to the Architect, Mr. T. J. HILL, 32, City-road, Finsbury-square, E.C. Tenders to be sent in to me at the Vestry-hall, City-road, on or before MONDAY, the 25th MARCH inst. at TWELVE o'clock at noon. The Guardians do not bind themselves to accept the lowest or any Tender.
W. W. HAYNE, Vestry Clerk.
Vestry Offices, City-road, 7th March, 1872.

TO BUILDERS and CONTRACTORS.—The Directors of the East London Cemetery Company, Limited, are prepared to receive TENDERS for ERECTING TWO NEW CHAPELS and ENTRANCE-LODGE at the New Cemetery, Plaistow, Essex. The drawings, specification, and conditions of contract for the works can be seen and other particulars may be obtained on and after TUESDAY, the 19th day of MARCH next, of Mr. CHARLES DUNCH, Board of Works Offices, White Horse-street, Stepney, Architect. Sealed Tenders, marked "Tenders for Chapels, &c. East London Cemetery," will be received by the Directors at the Offices of the Company, No. 2, Lombard-court, Gracechurch-street, E.C. up to TWO o'clock in the Afternoon of MONDAY, the 25th of MARCH, 1872. The Directors do not bind themselves to accept the lowest or any Tender. A copy of the quantities will be supplied upon payment of two guineas, which will be returned to each party on the receipt of a bonâ fide Tender. The contractor will be required to execute a contract for the due performance of the contract, and shall find two approved sureties to execute a bond for the like purpose for the sum of 500*l.* such contract and bond respectively to be prepared by the Solicitors of the Company, at the expense of the contractor.

TO BUILDERS and CONTRACTORS.—The Town Council of the Borough of Droitwich, in the county of Worcester, are desirous of receiving TENDERS for the CONSTRUCTION of BRICK and other FOOT PAVEMENTS, STONE MASON'S and PAVIOR'S WORK for the Parish of St. Peter, in the said Borough. Specifications may be seen, and all particulars known, by application to me, at my Offices, Worcester Chambers, Worcester, after SATURDAY, the 9th day of MARCH next, between the hours of ELEVEN a.m. and FOUR p.m. Sealed Tenders to be delivered at the Town Clerk's Offices by TWELVE o'clock, on SATURDAY, the 30th day of MARCH next, addressed to the Town Clerk, endorsed "Tender for Foot Pavements." The proprietors do not bind themselves to accept the lowest or any Tender.
JAMES ALLSOP, Architect.
Worcester Chambers, Worcester.

THE PROVINCIAL GOVERNMENT of BUENOS AYRES.—Notice is hereby given, that the Minister of Finance of the Province of Buenos Ayres is prepared to receive TENDERS for the CONSTRUCTION and SUPPLY of the IRON-WORK of a PIER and VIADUCT for the Port of San Pedro, South America.
Printed specifications and plans of the Harbour Works, and printed forms of Tender and Schedule, may be obtained on MONDAY, the 11th inst. and Following Days, at the Office of Messrs. C. de MURRIETA & CO. 7, Adams-court, Old Broad-street, London, for which a charge of three guineas will be made.
Sealed Tenders, addressed to myself, and endorsed "Tender for Harbour Works at San Pedro," must be delivered at Messrs. C. de MURRIETA & CO.'S Office, before FOUR o'clock in the afternoon on MONDAY, the 25th of this month.
The Minister of Finance of the Province of Buenos Ayres is not bound to accept the lowest or any Tender.
J. J. REVY, Engineer.
London, March 7th, 1872.

GREAT WESTERN RAILWAY.—The Directors of this Company are prepared to receive TENDERS for the purchase of OLD MATERIALS, as undermentioned, viz.:—

Spring Steel	about 220 tons.
Steel Tyres	" 19 "
Yellow Brass	" 15 "
Brass Tubes	" 2 "
Copper Refuse from Telegraph Batteries	" 2½ lb.
Silver Telegraph Plates	" 10 tons.
Broken Glass	" 14 "
Grease	" 5 "
India Rubber	" 4 "
Files	" 2 "
Carriage Trimmings	" 70 "
Tarpaulin Cuttings	" 8 "
Rope	" "

Forms of Tender (upon which only Tenders will be received) may be obtained on application to the Secretary, at Paddington; or to the Storekeeper, at the Swindon Station.
Tenders, sealed, and marked outside "Tender for Old Materials," and addressed to the undersigned, will be received up to TEN a.m. on WEDNESDAY, the 20th inst.
The Directors do not bind themselves to accept the highest or any Tender.
FRED. G. SAUNDERS, Secretary.
Paddington Station, London, 4th March, 1872.

TO TAR DISTILLERS and OTHERS.—The Directors of the Gas-light and Coke Company are prepared to receive TENDERS for the PURCHASE of the TAR manufactured at their stations at Beckton, Westminster, Blackfriars, Silvertown, Bow Common, and Pimlico, from the 30th of June next, for a period of One, Three, or Five Years. The total yearly quantity manufactured will be about 4,000,000 of gallons. Payments to be made monthly, in cash. Contractors may be required to enter into a bond for the due performance of their contract. Proposals to be sent in on or before THURSDAY, the 14th instant, addressed to me, and endorsed, "Tender for Tar." The Directors do not bind themselves to accept the highest or any Tender, and reserve to themselves the right of accepting the whole or portion of any one Tender.—By order,
JOHN ORWELL PHILLIPS, Secretary.
Chief Office, Horseferry-road, Westminster, S.W.
7th of March, 1872.

HENRY HILL, whose last known address was Craddock-street, Haverstock-hill, is requested to COMMUNICATE with WILLIAM WILDS, Hertford.

BRICKS. — To CONTRACTORS and OTHERS.—WANTED, a Gentleman willing to JOIN the Brickmaker to Make Up the Earth now prepared where there is a great demand. Any Builder or Contractor will find this an excellent opportunity for obtaining bricks at low price. The field is situated on the Grand Junction Canal, about five miles from town.—Address, C. PLATER, 8, Abercorn-villas, Alperton-road, Sudbury, Middlesex.

TO BUILDERS, &c.

A PARTNER is WANTED, with a moderate capital, to join in an established BUSINESS, which is capable of much extension, in an improving country town. An active Partner is necessary to assist in conducting the business, which has much increased of late.—For particulars, apply to Messrs. PILGRIM & PHILLIPS, Solicitors, Church-court, Lothbury, London.

TO ARCHITECTS AND SURVEYORS.

PARTNERSHIP. — A GENTLEMAN, who had experience in the City, and who is prepared to apply himself assiduously to his profession, wishes to PURCHASE a SHARE in an old-established PRACTICE, or to obtain an ENGAGEMENT, with a prospect of future Partnership or Purchase.—Apply, by letter, to Messrs. JOHN MACKRELL & CO. 21, Cannon-street, E.C.

WANTED, immediately, for a short time, a first-class GOTHIC ASSISTANT, to aid in completing the drawings for a church. It is requested that only those thoroughly competent will reply, stating terms, No. 471, Office of "The Builder."

TO ARCHITECTS' ASSISTANTS.

WANTED, by an Architect (temporarily), a very experienced, practical, expeditious, and able DRAUGHTSMAN, thoroughly versed in construction, working and detail drawings, and specifications, and clever at design in the Italian style and detail. A liberal remuneration will be made to an Assistant possessing all the above requirements, and it will save trouble if none else apply.—Address, giving terms, age, and all particulars, 522, Office of "The Builder."

TO GLASS STAINERS.

WANTED, a good FIGURE DRAUGHTSMAN.—Apply, to BALLANTINE & SON, 42, George-street, Edinburgh.

WANTED, in London, a competent BUILDER'S OUT-DOOR FOREMAN. — Apply, stating wages required, and with reference to last employer, to No. 484, Office of "The Builder."

WANTED, in the suburbs, an experienced PAINTER, DECORATOR, GRAINER, &c. as WORKING FOREMAN. A permanent situation to a good man.—Apply on TUESDAY evening next, between FIVE and SEVEN, for Mr. WRIGHT, the Albert Tavern, Victoria-street, Westminster.

WANTED, immediately, a first-class PAPERHANGER. One who can fill up his time with plumber's, glazier's, or gasfitter's work, or with joiner's or cabinet-maker's work. None but good practical paperhangers need apply. Wages 30s. per week.—Apply to W. LANGDALE, Builder, Baxter-gate, Whitby.

TO STONE AND MARBLE MASONS.

WANTED, an experienced WORKING FOREMAN, well up in the monumental trade. To an energetic and pushing man who can get out work quickly, this will be a good and permanent situation.—Apply, in confidence, with full particulars, to L. J. WATTS, Stone and Marble Works, 88 and 90, High-street, Colchester.

TO GRAINERS.

WANTED, a good WORKMAN.—Apply, stating wages, &c. to B. 42, Victoria-road, Margate.

WANTED, a PLUMBER'S ASSISTANT. Address, stating age, references, wages expected, and length of time at trade, to 536, Office of "The Builder."

WANTED, a Man, accustomed to CLEAN and PACK UP MOULDS. Constant employment to a steady man.—Apply to E. DUSAUTOY, Stuart-street Saw-mills, Derby.

TO DECORATORS.

WANTED, a Young Man, accustomed to General CHURCH DECORATING. To a suitable person a permanent position can be offered. Also, a YOUTH WANTED as IMPROVER.—Apply, R. TATTERSALL & CO. Church Furnishers, No. 25, Southampton-row, Holborn.

WANTED, by a London Firm in the Iron Trade, a TOWN TRAVELLER, who would be required at times to Assist in the Drawing Office, and must therefore have some knowledge of drawing, taking out quantities, &c.—Apply, by post only, stating age, where last employed, salary expected, &c. to T. T. care of Messrs. Dewick & Son, 46, Barbican, E.C.

TO WRITERS AND GRAINERS.

WANTED, a Young Man, who is a good WRITER and GRAINER, to fill a permanent SITUATION, in an old-established business. Must thoroughly understand his trade, and be able to produce good testimonials and specimens of work.—Address, stating wages, W. GARDNER, 37, Snargate-street, Dover.

WANTED, a good THREE-BRANCH HAND, to live on the premises and take charge of a jobbing business. Must be able to give good references as to ability, sobriety, &c. Must be married. Wages 35s. per week, with use of apartments. Address, in own handwriting, to 530, Office of "The Builder."

DISTRICT of SOUTH HORNSEY, Middlesex. — ROAD SURVEYOR and INSPECTOR of NUISANCES WANTED. — The Local Board of this District are desirous of receiving APPLICATIONS from qualified persons to fill the Office of ROAD SURVEYOR and INSPECTOR of NUISANCES. Salary, 100*l.* per annum, with residence at the Offices of the Board. The person appointed must be prepared to commence the duties on March 25th, 1872, or at such other time as may be agreed upon by the Board and the person to be elected. Applications, in candidate's own handwriting, stating age, present and previous occupation, and accompanied by recent testimonials, not exceeding three, to be sent to me not later than the 13th MARCH. Selected candidates will receive notice to attend on the day of election.—By order of the Board,
EDWARD B. BENNETT, Clerk.
Offices of the Board, 18, Spenser-road, South Hornsey, near Stoke Newington-green, N.

TO MASONS.

WANTED, a WORKING FOREMAN to Manage a small Bath Stone and Kentish Rag Job.—Apply to PARAMOR & SON, Builders, Margate.

WORKING FOREMAN of CARPENTERS.—WANTED, a thoroughly practical Man. Must be a fair draughtsman and good at estimating. Accustomed to good jobbing work.—Apply by letter to F. S. 3, New-street, Dorset-square.

WANTED, by an Architect, a good ASSISTANT.—Address, stating antecedents and salary required, to 459, Office of "The Builder."

WANTED, a CLERK of WORKS for an important Building in a Provincial town. He must be a man of considerable experience of large works. Salary, 50s. a week.—Apply, by letter only, sending copies of testimonials (which the advertiser does not pledge himself to return), to W. F. C. Royal Inst. of British Architects, 9, Conduit-street, London.

WANTED, in an Architect and Surveyor's Office, a respectable YOUTH, who writes a good hand, and is able to copy and trace drawings. The situation offers advantages to a youth desirous of improvement in the general duties of a surveyor's office. A small salary to begin with.—Apply by letter to Messrs. WAYMOUTH & SON, 12, Moorgate-street, E.C.

WANTED, by the Commissioners for Public Baths and Washhouses of St. George's, Hanover-square, for their Establishment in Buckingham Palace-road, an ENGINEER, of good character, competent to take charge of the Machinery, Furnaces, &c. and capable of Fixing and Repairing Valves, Taps, Hot Air and Water Apparatus. Applications, with testimonials and recommendations, stating age, present and previous employment, to be sent in to Mr. BANISTER, Board-room, Buckingham Palace-road, on or before WEDNESDAY, the 13th MARCH, 1872, where the Commissioners will meet on the THURSDAY following (the 14th inst.), at ELEVEN o'clock, when Candidates are expected to be in attendance. Particulars of duties and salary to be obtained from Mr. SHAW, the Superintendent, on the Premises,—By order,
1st March, 1872. W. H. BANISTER, Clerk.

CLERK of WORKS. — WANTED, a CLERK of WORKS, acquainted with drainage works. Must be a first-class leveller and draughtsman, and well up in quantities.—Apply, with full particulars, salary, &c. to No. 479, Office of "The Builder."

AN ARCHITECT and SURVEYOR requires the SERVICES of TWO experienced ASSISTANTS in London. They must be acquainted with general practice, practical details, specifications, &c. and good draughtsmen. Also an experienced ASSISTANT, competent to take out quantities, measure up work, make out builders' accounts, a good writer and correspondent.—Address, in writing, stating age, general qualifications, salary required, &c. to "Office," 8, Birchin-lane, E.C.

A TIME CLERK WANTED.—Hours the same as the Men, but say two days per week assisting at the Office. Must be well up in making up time-sheets and booking time and materials, posting up the books, quick at figures, and thoroughly understand his business.—Address, with salary expected and where last employed, 458, Office of "The Builder."

TO BUILDERS AND OTHERS.

WANTED, by a thoroughly practical PLASTERER, a SITUATION, as WORKING FOREMAN, or to Take Work by the Piece. Either in town or country.—Address, BETA, 19, Milner-street, Ovington-street, Chelsea, S.W.

WANTED, by a thoroughly experienced MACHINIST, a SITUATION, to WORK MOULDING, MACHINE, GENERAL JOINER, &c. Can make cutters, and do own repairs, if required.—Address, A. B. 28, Art-street, Wolverhampton.

WANTED, by a thoroughly practical Man, a RE-ENGAGEMENT as GENERAL FOREMAN of CARPENTERS and JOINERS. Town or country. Twelve years' experience. Good reference.—Address, J. B. R. 46, Cloth Fair, Smithfield, London, E.C.

WANTED, by a thoroughly practical Man, CARPENTER, JOINER, and STAIRCASE HAND, aged 32, a RE-ENGAGEMENT as WORKING or GENERAL BUILDER'S FOREMAN. Country preferred. Good references.—Address, A. H. No. 27, Thorne-road, South Lambeth.

WANTED, by a thoroughly practical Man' an ENGAGEMENT as GENERAL FOREMAN, or otherwise Well up in setting out work and superintending men. Has carried out large works. Carpenter by trade. Good references. Aged 32.—Address, T. A. 29, Hollington-street, Avenue-road, Camberwell.

TO IRONMONGERS AND OTHERS.

WANTED, by a thoroughly practical and experienced Man, a SITUATION as FOREMAN or MANAGER of SMITHS, Bellhangers, Gasfitters, Hot-water Engineering, &c. Town or country.—Address, Mr. ROYALL, Post-office, Westbourne-grove, Bayswater, London.

TO BUILDERS AND OTHERS.

WANTED, by a thoroughly practical Man, a SITUATION as WORKING FOREMAN of PAINTERS. Can do graining if required. Unexceptionable testimonials. No objection to town or country.—Address, A. Z. 7, Denmark-road, Kilburn.

TO BUILDERS AND CONTRACTORS.

WANTED, by a thoroughly practical Man, a RE-ENGAGEMENT as GENERAL FOREMAN or SHOP FOREMAN of JOINERS. Town or country. First-class references and testimonials.—Address, C. 3, Ravensworth-terrace, Fulham.

WANTED, by a thoroughly practical Man' a RE-ENGAGEMENT as GENERAL FOREMAN. Town or country. Carpenter and joiner by trade. Twenty-five years' good London experience. Seven years' first-rate testimonials from last employer.—Address, W. H. B. 49, Borough-road, Southwark, S.E.

TO NOBLEMEN, GENTLEMEN, AND LARGE ESTATE PROPRIETORS.

WANTED, by a thoroughly practical Man, a RE-ENGAGEMENT as WORKING or GENERAL FOREMAN. Has been engaged on a large estate for many years, superintending all buildings erected thereon, and the house joinery of the mansion; the management of gas and water works, with hydraulic rams; also the working of all kinds of modern wood-cutting machinery. Good reference and testimonials.—Address, H. 51, Cale-street, Chelsea, S.W.

TO ARCHITECTS, &c.

WANTED, by a Young Man, of respectability, an ENGAGEMENT as CLERK of WORKS, or CLERK and DRAUGHTSMAN combined. Mason by trade. For many years past he has had the management of the constructive portions of buildings, public, domestic, and ecclesiastical. Has a thorough knowledge of masonry, brickwork, and sanitary matters, and a good knowledge of the other building trades. Has also had a training in a Government School of Art, in drawing, geometry, and modelling. Is a good architectural draughtsman, designer, and colourist. Unexceptionable references to character, &c.—DILSTON, Office of "The Builder."

TO AUCTIONEERS AND LAND AGENTS.

WANTED, by a Young Man (aged 20), who is a good draughtsman, and has had practical experience, a SITUATION in an Office where he can IMPROVE himself. Salary not a consideration.—Address, 401, Office of "The Builder."

TO MASTER PLUMBERS AND OTHERS.

WANTED, by a Young Man, a SITUATION as IMPROVER, who has had three years' experience in the Plumbing and Hot-water Work. Has a knowledge of gas-fitting. No objection to the country. — Address, Mr. THOMAS, 28, Brindley-street, Harrow-road, Paddington, W.

TO BUILDERS.

WANTED, a RE-ENGAGEMENT as GENERAL FOREMAN. Good references.—Address, A. B. 201, High-street, Southwark, S.E.

TO BUILDERS.

WANTED, a RE-ENGAGEMENT, as FOREMAN of MASONS, or to Take Charge of a Job, principally stone. No objection to the country. Good reference from last employer.—Address, 439, Office of "The Builder."

WANTED, a RE-ENGAGEMENT, as SHOP or GENERAL FOREMAN, by a thoroughly practical Man (joiner). First-class knowledge of machinery, piecework prices, and management of workmen. Ten years' experience.—Address, A. R. 32, Victoria-street, New Bridge-street, Leicester.

WANTED, a RE-ENGAGEMENT, as GENERAL FOREMAN. Ten years' experience. Carpenter and joiner by trade. Good references and testimonials. No objection to the country or abroad.—Address, A. B. 26, Benfield-street, York-road, Battersea.

TO CONTRACTORS, &c.

WANTED, a RE-ENGAGEMENT, by a CONTRACTOR'S ASSISTANT. Qualifications, drawing, estimating, quantities, measuring, book-keeping, and practical supervision. No objection to the provinces.—Address, T. S. care of Mr. G. Street, 30, Cornhill, E.C.

TO BUILDERS AND CONTRACTORS.

WANTED, a RE-ENGAGEMENT, by a thoroughly practical Man (Carpenter and Joiner by trade), as BUILDER'S FOREMAN, to take the Entire Charge of Works. Aged 36. References and testimonials undeniable. Country preferred; no objection to go abroad.—Address, E. L. 143, Speak-road, Plough-lane, Battersea.

TO BUILDERS AND CONTRACTORS.

WANTED, a RE-ENGAGEMENT, as GENERAL FOREMAN of JOB. Thoroughly experienced Carpenter. Terms moderate. Town or country.—Address, FOREMAN, 48, Westbourne-road, Barnsbury.

WANTED, a RE-ENGAGEMENT, as CLERK and SURVEYOR to a BUILDER and CONTRACTOR, or as ESTATE MANAGER, or as CONTRACTOR'S AGENT. The advertiser is an experienced accountant, estimator, and draughtsman. Fourteen years' reference to a London firm.—Address, A. B. 2, Bond-street, Holford-square, W.C.

TO ARCHITECTS AND BUILDERS.

WANTED, a RE-ENGAGEMENT, as CLERK of WORKS, or GENERAL FOREMAN (Joiner by trade). With the last London firm over seven years as above. Aged 35. Good references.—Address, G. M. 23, Andover-road, Albion-road, Hammersmith, W.

WANTED, a RE-ENGAGEMENT, as GENERAL BUILDER'S FOREMAN, Out-door or on an Estate, by a thoroughly practical Man. Carpenter and Joiner by trade. Aged 36. Just now completed a five years' job. First-class testimonials from last employer.—Address, D. H. U. 28, Matilda-street, Richmond-road, Islington, London.

WANTED, a RE-ENGAGEMENT, as SHOP FOREMAN, OUT-DOOR FOREMAN, or CLERK of WORKS, by a thoroughly practical London Builder's Foreman. Joiner and Staircase-hand by trade. Aged 34. Good draughtsman, and well up in piecework and machinery of all kinds. No objection to fill up time in the office. First-class testimonials from London Architects and Builders.—Address, A. B. FRANKLIN, 5, Catherine-street, Copenhagen-street, Caledonian-road, N.

TO BUILDERS AND CONTRACTORS.

WANTED, immediately, a RE-ENGAGEMENT, by a Young Man, with one of the above. Aged 28. Well up in all office work. Twelve years' first-class testimonials. Good penman, &c. Salary moderate.—Address, R. C. H. 6, Bower-street, Commercial-road, E.

TO ARCHITECTS AND CIVIL ENGINEERS.

WANTED, by a JUNIOR ASSISTANT of practical experience, a RE-ENGAGEMENT.—Address, W. L. 30, Abingdon-road, Kensington, W.

WANTED, by the Advertiser, an ENGAGEMENT as GENERAL FOREMAN. CARPENTER by trade. Good references.—Address, G. T. R. 1, Eaton-place, Wells-street, South Hackney, N.E.

TO ARCHITECTS, &c.

WANTED, by the Advertiser, aged 17, a SITUATION, in an Architect's Office, as IMPROVER. Is a fair draughtsman, and very industrious. Unexceptionable references. Address, E. C. S. 265, High-street, Stratford, E.

TO MASTER PLUMBERS, BUILDERS, AND OTHERS.

WANTED, by the Advertiser, a CONSTANCY or JOB as PLUMBER or THREE-BRANCH HAND. Can do plain zincwork. Town, country, or abroad.—Address, W. D. A. 483, Liverpool-road, Holloway, London, N.

TO BUILDERS, &c.

WANTED, by the Advertiser, a RE-ENGAGEMENT as CLERK. Is a competent book-keeper and accountant, and is well up in prices and the usual routine. Six years' reference. Town or country.—Address, ALPHA, 4, Great Percy-street, Pentonville, W.C.

TO BUILDERS.

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The Builder.

VOL. XXX.—No. 1519.

Megaliths and Tumuli: their probable Eras, "Architects," and Purposes.

IN this subject archæologists are more or less divided into two classes,—the low-age and the high-age, according to their belief in the less or greater antiquity of the monuments in question. Mr. Fergusson is what we must really call a special pleader for their low-age; and he appears to regard a supposed proof that one or two, or a few, monuments of any one class must have been constructed since the Christian era commenced, to be sufficient to show the probability that all, or almost all, of that class belonged to much the same era. His work is a laborious and valuable one, as a collection of facts and illustrations, but it is on this account, and not on account of its theoretical or explanative value, we should think, that it will become, as it doubtless will, a standard authority. Historical proof of the extreme antiquity of pre-historical structures is, of course, an inconsistency and an impossibility; but it is incumbent on those who maintain the age of such structures as those we speak of to be within historical limits, to prove their case by historical evidence, and this we think no low-age advocate has yet done. On the supposition, however, that they really are, as a class, pre-historical, and of great antiquity, how are we to show the probability, at least, that they are so? Here is a difficulty not easily surmountable. Still we conceive that there is a way,—a new way; and we shall now proceed to indicate slightly rather than fully to show that way. Meantime we may remark that the fact that a few of the monuments in question,—if it be a fact,—have been proved to have been constructed since the beginning of the Christian era, is precisely what was to be expected by the high-age archæologists. These monuments are admittedly Pagan in their origin. The Pagan era preceded the Christian, from prehistoric times; but overlapped it, and continued, even in partially Christianised countries, to exist down to comparatively recent ages. The Pagan era itself was undoubtedly and admittedly of prehistorical and extreme antiquity; and so, in all probability, are most of its more lasting monuments; but as Paganism continued to exist, and indeed still continues to exist, in the Christian era, there must be Pagan monuments erected during the Christian era; and that may be proveable: it is what cannot but be. Some low-age advocates, however, would really almost seem to desire to establish the anachronism that the Pagan era and its monuments were not pre-Christian at all, as a rule. Such a line of argument may well suit the advocates of the literal interpretation of Scripture as to the age of the earth and of man, and the necessity or special advantage of crowding down as much of the Pagan era and its megalithic and other works into recent ages as possible. But since it has been proved, by the implements of the glacial drift, that man must have existed on the verge of the glacial era at least, if not actually during or throughout that era; and since many thousands of years must have passed since that time,—however possible it may be, as we think it is, greatly to shorten the time of the glacial era itself, by showing reasons for vastly more rapid grinding action of the rocks, by ice and flood then than now, by the alternation of hot or tropical summers with Arctic winters, just as even now summers alternate, though in a minor and not tropical degree, with the winters, in the present restricted Arctic regions;—we have plenty of time, during all of which the Pagan era *must* have continued, for its monuments to last, if capable of outlasting severe and trying alternations such as even the immediately post-glacial era must have brought to bear upon them in now temperate latitudes like that of Britain. And were they not capable? What works of man were ever more fit for war with the elements than those tremendous rocks and artificial hills which Pagans reared? what works of ancient man were ever so suited for such an era?

The outlined history of man having been extended by the drift implements back to the glacial era, which materially affected the contours and the limits and sea levels of the habitable land in all countries,—the British Isles, at that time, for example, being a series of highland "isles," with tenfold significance; since the low-lying land in the glacial era lay hundreds of feet below the level of the ocean;—this state of matters, throughout, a great part of the hemisphere, *but not the whole*, necessarily affected, very materially, the distribution of mankind from their chief centre or centres, further south, or wherever these may have then existed.* The geological question, therefore, involves and rules the ethnological, as the ethnological does the "architectural" and mythological. Even on ethnological and architectural grounds, therefore, we must first of all say a few words on the geological phase of the questions at issue, which phase cannot *now* be any longer ignored in an inquiry such as this.

In a few words, the glacial era was simply an intensification and extension of the *still existent and operative causes*, productive, even now, of the present state of things in the Arctic circle and region, spreading it farther south into now temperate latitudes, though not over the whole of the hemisphere.† The winter cold was more extreme than now; and (as the existence of tropical and other animals in the glacial region indicates) so was the summer heat; and during this era of ice and flood the land, or rather the surface of the earth's crust, had already assumed the general outlines which it still possesses, but was sunk in sea level, and existed partly beneath the ocean, so that what are now low level plains and countries had no existence then, as such, at all; and the British Isles, as we have said, were "islands" in tenfold intensity of meaning to what they now are. In fact, it was mainly the backbone, as it were, of the country, or the high lands, including Cornwall, most of Wales, Cumberland and Northumberland, and some other districts, with the highlands of Scotland, that were above water and constituted a collection of islands. So with Ireland, which was nearly a great ring of high land enclosing the sea; and so with other countries: the great plain of Europe was under water; but Scandinavia, like Britain and Ireland, was a series of islands. So was the high land of Europe, including parts of France and Spain, and so was the Caucasus. The nearest great continent, however, was the heart of Africa, including Upper Egypt, Abyssinia, and parts of Algeria and Morocco. The great desert of North Africa, though a vast level plain, was sooner uncovered than the great plain of Europe and Asia. A great part of the vast continent of Africa, moreover, like great districts of Asia, never came under actually glacial influences at all; or was not, even then, within the extended Arctic circle; but was tropical or temperate, and high and habitable land, while the glacial era in the isles of the great ocean lasted; as well as before and afterwards. The continent next nearest, after Africa, to the European isles, was Upper Asia, including Thibet as the central land, the Himalayan and sub-Himalayan regions, Persia, and the higher districts of China adjoining Thibet. The great desert of Gobi, like the Sahara of Africa, was above water before the great plain of Europe. So was it with the Deccan aboriginal plateau of India, and with Asia Minor and Arabia; but Thibet and the Himalayas were the grand centre of the Asiatic continent, as they still are. Except through Persia and Asia Minor, Asia was then divided from Europe by a vast sea, which covered the low lands of Asia, and the great plain of Europe, as its remnants, the Caspian and Black Sea still do. The American continent was then also materially different from what it now is, but we need not here enter further into that subject; except to note that, as man existed in the glacial era, the frozen North Atlantic in the winters would form a way of communication for tribes, such as the Esquimaux, or the Laps and Fins, to traverse with freedom east and west as well as north and south. But although the men of the glacial drift itself were probably as little advanced as the men of the Arctic drift are at the present day, there is no reason, in the physical state of the earth at that time, why men of a far more advanced state—nay, as civilised at least as the Moors or Abyssinians of North Africa, or the Thibetans or Chinese of Upper Asia,—may not also, and simultaneously, have existed as comfortably as now, in the south; while the extended Arctic region of the glacial era covered the more northern, and now temperate, latitudes of the globe. Such is the case, both in Africa and Asia, as well as Europe, now, by comparison with the present glacial region, and such may have been the case then, as regards parts of Asia and Africa. And even had the more northern (but now temperate) latitudes not been at all habitable by man during the full extension of the Arctic circle to these latitudes, as the more restricted Arctic or glacial region and era now are; no sooner would the extended Arctic circle dwindle into less extended dimensions, so that the latitudes of Europe and the British Isles became less severe in climate, or more temperate, than migratory races from the more southern and genial countries,—that is, from the north-west of Africa and the south-west of Asia,—would penetrate into these "Isles of the sea," *and first of all from Africa*, as the nearest continent, into Spain, France, and England; that is, from

* Professor Phillips, in his "Treatise on Geology" (p. 78), thus describes the general features and the probable time of the glacial era in Britain and Ireland:—

"There is reason to think that, *during very late geological*,—PROBABLY PREHISTORICAL,—*periods*, the same northern zones of the earth which, *in earlier times*, had nourished *plants and animals resembling those within the tropics* [the summers being even then still tropical?], were chilled by a general reduction of temperature [in the winters, then Arctic], so that *the mountainous* [and at that time island] *regions of Great Britain and Ireland*, were covered with perennial snow; their rugged *valleys* filled with *gliding* glaciers; *the seas at their feet* filled with Arctic life, and covered by *floating* icebergs, loaded with rocks."

The land, as he remarks, was then, or during part of the glacial era, covered by the ocean to a depth of 1,500 ft. to 2,000 ft. more than now; but it appeared by degrees *during* that era, and continued to do so, till the close of the glacial and the opening of the "post-glacial and lacustrine" or lake era, after which "much the same general conditions of land and sea as those which now prevail" came at length to exist.

† We have on several occasions treated of this subject, both in its geological and its astronomical aspects, in the *Builder*,—*e. g.*, on 10th of August, 1861; 4th of October, 1862; and 8th of September, 1866; if not previously also, and since that time; and we must refer to these occasions for a more particular account of this simple view of the ancient glacial era, and of the present Arctic region, as its residue or remnant and restricted glacial era of the present time; the key to which is, popularly speaking, the movement of the sun in the ecliptic, which is the cause of the alternation of winter and summer, according to the increase or diminution of the obliquity of the angle between the equator and the ecliptic, which angle, from time immemorial, has admittedly been on the decrease, as the extremes of winter and summer must therefore have also been, according to geological evidence, by which the astronomical, admittedly extremely defective, must now be instructed.

Morocco and Algeria into the high land of Spain, into Aquitaine and Brittany, and thence into Cornwall, Wales, the Isle of Man, the high land encircling the sea in Ireland, and also, in fewer numbers, into Cumberland and Northumberland, as well as, in still fewer numbers, into the high lands of Scotland; and thence (let us say, in place of the contrary route) into Scandinavia.

In other words, *these migrators from North Africa would necessarily and unavoidably take almost the exact route indicated by Mr. Fergusson's own most suggestive and valuable "Map, designed to illustrate the distribution of dolmens and probable lines of the migrations of the dolmen-builders;"* avoiding, as they need must, the eastern and more lowland districts of England, the central lowlands of Ireland, and the eastern lowlands of Scotland, since these must have been beneath sea level when this great migration from Africa must have taken place, at the close of the glacial era, and before the land came to the level of less ancient ages. It might have been expected that in subsequent ages the dolmen-builders, if they then existed, might have erected them at lower levels; but they appear to have never been built, as a rule, in the lower districts of Britain, where tumuli and other forms took their place; and it was not till they had reached Scandinavia that the first great evidence of a descent to somewhat lower levels appears on the dolmen map in the region of Denmark and the northern corner of Germany adjoining it.

In long after times, when the great plain of Europe became dry land, other migrants would spread themselves westwards, across the Steppes of Asia and the low-levelled middle region of Europe to the Belgian district, and thence to England. And this route across Europe is precisely that which is strewn with *barrows or tumuli* in innumerable thousands.

Meantime, however, and long before these barrow men could have crossed Europe, the African aboriginal possessors of the isles of the great sea must have been already intruded on, south-westward, from Asia, through Asia Minor, along which route also so many tumuli are scattered; but by this route far higher and more civilising influences, architectural as well as others, were thrust upon the Western peoples than any they probably ever derived either from Africa or through the great plain of Europe: not that we necessarily entertain the idea that *because* the megaliths of the Africans were rough and rude, and mere glacial boulders (lifted, it may be, by great tides, into their high places in the then semi-insular or "sacred enclosures," or islands, spoken of, in far later times, by the bards or Taliesins; *therefore* these rough rocks were an undoubted proof and token of North African barbarism: on the contrary, it may only have been because the dolmens were untooled rocks, or stones, that they were devoted and used, untouched, unaltered, for sacred purposes. "If thou wilt make me *an altar* of stone, thou shalt not build it of hewn stone; for if thou lift up thy tool upon it, thou hast polluted it," said the Lord [in Exodus xx. 25] to Moses, the African, who was "learned in all the wisdom of the Magi," of the Africans, or at least of the Egyptians; and again [Deut. xxvii. 5],—"Thou shalt build the altar of the Lord thy God of whole stones,"—of boulders, in fact, whether great or small. And is it not curious, in this connexion, that as the sacred stones even of those early Jews of the later ages were probably glacial boulders, so their sacred or sacrificial knives were always flint implements, even while iron was used for other purposes? These ideas themselves look almost like *vestigia* of an extreme antiquity, far back beyond merely Jewish times; and, at all events, they go to show that the dolmens were sacred structures,—not that the Africans were then mere savages.

Now, the conclusions that have been or are being arrived at by ethnologists as to the aboriginal races who must have peopled this country in remotely ancient times are in singular accordance, as some of Mr. Fergusson's are, with these ethnological ideas. The apparently most ancient race, it is concluded by ethnologists, were a dark-haired, long-skulled, short, dark-eyed people, who have been traced to Spain and called Iberians and Milesians. These, we conceive, must have been of African blood, like the Moors in Spain. Another and less ancient race were light-haired, round-skulled, tall, and light-eyed. These must have been of Asiatic or Mongolian blood, whether by the southern or first route, including the Caucasus, or by the second or more northern and Scythian route, across the Steppes of Tartary and the great plain of Europe. From the conjunction, probably, of these two,—the aboriginal dark race with the intrusive light race,—and chiefly, we should think, with the light race as warrior- and intrusive fathers, and the dark as aboriginal and receptive mothers,—another race, with dark hair and light eyes, as described by Professor Huxley, whom we are here following from memory, are recognisable. These we suppose to be the Celtic race. But the Teutonic element indicated here in the light-haired, round-skulled, tall, and light-eyed race must be distinguished, as Huxley remarked, from the Saxons and Danes of far less ancient times, though originally, doubtless, the same, essentially, in blood. There have been successive intrusions, but it is the more primitive intrusion of which we here speak.

Now it is remarkable that the flint arrow-heads, axe and chisel heads, and other implements of the men of the glacial drift of the British Isles, to use the words of Professor Ansted, in his lectures on Geology at the Royal Institution, in 1860, are "exactly like the flint celts and arrow heads of the Ancient Britons." And we may here incidentally remark that these implements of the *glacial* or Arctic era men, as is well known, have been found in connexion with the bones of the elephant, hippopotamus, and other animals of *warm* climates, a fact which goes far to prove the truth of our simple view of the nature and cause of the glacial era, and to show that it was not an era of eternal and unmitigated fixed ice and snow, but of Arctic winters alternating with hot and something like tropical summers, clearly indicating, on the one hand, the departure of the sun further to the south than now in the winters; and, on the other, its inroad further to the north than now in the summers; so that Arctic life and tropical life co-existed, as a fact, side by side; only the tropical or sub-tropical animals were covered with hair, at least in the winters, if we may judge from the remains of a *long extinct* elephant actually found imbedded and preserved, it must have been for thousands of years, in the northern ice, and eaten of by Siberian dogs, not many years ago.

Since the flint or stone implements of the men of the glacial era are exactly like those of the Britons of Druidical and historical times, it is probable that in their changeless barbarism (to use a phrase of Mr. Fergusson's), they were the same people essentially in the glacial and prehistorical era as in the time of the Romans; and that if they were dolmen builders and tumuli rearers in the Christian era, so were they for thousands of years before that era began; just as they were not only flint-implement makers during all that time; but, with the traditional fidelity of beavers to their dam-building, or birds to their nests, were makers, for all these thousands of years, of even the exact same patterns of such implements; and, while their flint implements of the glacial era still exist, side by side, and identical, with those of the Christian era, and undistinguishable from them, except by the localities in which they were found,—it is highly improbable that their supposed or admitted monuments of the Christian era, or end of the Pagan era, have no predecessors of far more ancient ages, during that same Pagan era, to match them, although the ponderous and lasting nature of such rude monuments well fits them to endure for many thousands of years.

Since the people whose priesthood, in Roman and Christian ages, were Druids probably were one and the same people with that of glacial, or, at least, post-glacial and lacustrine times, one would expect that, in the records of the later descendants of that pre-historical and pre-Christian priesthood, few as these records are, some traces may be found of the leading special physical features of the country in these more ancient times; and, above all, we would expect to find something notable about seas, and islands, and lakes, and boats. Now, this is precisely the case. The "bards" of Wales, who were one of three orders of the ancient British priesthood,—ovates, bards, and Druids,—in the Taliesin records, while speaking of "Deon or Hu," the great Druidical god,—round whose "narrow cell, beneath the tumulus," the priesthood, and it may be the people, danced in circles, "with frantic mirth,"—called this, their chief god, "the Emperor of the Seas," according to Davies's "Druids" (1809); and "the Ruler of the Deep." So numerous, indeed, are the allusions to seas, consecrated or holy islands, and sacred lakes, that one class of writers is well known to have held that it all related to rites connected with the Scriptural deluge and its retirement; and if that deluge could be supposed to have referred, in some allegorical or figurative way, to the covering of the land by the ocean, during the whole of the glacial era, they might, in a certain sense, be right; but we have no intention to identify our own ideas with theirs. Still, we may make a few quotations from the passages collected by Davies, Bryant, and others, from the Taliesin records. Thus:—

"Existing of yore in *the great seas*, from the time when the shout was heard [whatever that cataclysmic noise may have been] we were put forth; whilst, smiling at the side of the rock, Ner remained in calm tranquillity."

Ner, says Davies, was "the great Abyss, *now retiring*."

Taliesin [or one of the Taliesins; for Taliesin seems to have been an official title, and indicated the initiated] wrote a poem called "The Spoils of the Deep;" and in another poem, called "The Bardic Sanctuary," is the following:—

"O! thou proprietor of heaven and earth: [Hu, pronounced He] to whom great wisdom is attributed, a holy sanctuary there is on the surface of the *ocean*. May its chief be joyful in the splendid festivity, at the time when the *sea rises, with expanding energy*. Frequently does the surge assail the Bards over their vessels of mead. And on the day when the billows are excited may this enclosure [this sacred kist?] skim away through the billows. Come beyond the green spot from the region of the Picts . . . . a holy sanctuary there is on the wide *lake*; a city not protected with walls: the *sea* surrounds it."

The precise meaning of all this, and of much more like it, matters little here: all we have to do is to show how much the minds of the Druids or bards were engaged with seas, islands, and lakes.

As to islands, we have such passages as these. The Taliesin says, in respect to his initiation:—

"I went the circuit. I slept in a hundred *islands*: through a hundred caers [chairs, kistvaens, or dolmens (?) in sacred enclosures] I toiled . . . a second time was I formed . . . I have died: I have revived: . . . I am now Taliesin."

"What are the names of the three *insular* sanctuaries [or caers] *between the flowing and the ebbing tide*."

"In the *quadrangular enclosure*, in the *island* with the closed door, the twilight and the pitchy darkness [as of the Arctic winter and the early summer?] were mingled together."

It was not in Britain alone that islands were reverenced in this peculiar way. Baily, the French astronomer, wonders "why *islands* have had so distinguished a hold of the superstitious feeling of the *continentals*." Now, we can better understand this than in Baily's time."

And as to lakes, the Druidical allusions to these are no less frequent. Taliesin speaks of the "songs that were chanted by the Gwyllion, the children of the evening, in the bosoms of *lakes*." Gwill means fairy, night-wanderer, or witch. Gwyllion meant prophetesses who sang nightly songs, or songs in the night, as Hu, or Apollo, is said to have done, probably when "the God" was manifested in the entranced, who had "slept in the caers," or islands, and so became Gwyllion, or "became the God,"* as, in the kindred rites of Isis, Ceres, or Ceredwyn, the last being the Druidical name of the goddess Ceres, round whose central cauldron the Druids and Druidesses danced and circled till they were "inspired."

The supposed connexion of the Irish lakes with fairies (like that of the Irish tumuli with witches) has evident allusion to Druidical times and rites. The Welsh have a tradition very like that of Buddha stealing a flower from the Garden of Paradise. On a rock, near a *lake*, a door opened, every May morning, leading to *an island*, in the centre of the lake, where was an enchanted garden, inhabited by the Tylwyth Teg, or *Fair* family, a kind of fairies, who gave spirit-flowers and fruits to those whom they favoured. A sacrilegious wretch, however, once plucked a flower with his own hand, and lost his senses, in consequence, and the flower vanished as soon as he touched unhallowed ground. Thenceforth the door of the rock never opened more. The story reminds us a little of the golden branch which Æneas got from the Sibyl who lay (entranced) upon a rock, in her cell, which was *the way* to the Elysian Fields, or to the Shades.

Coracles or other boats, as well as lakes, islands, and seas, had much to do also with Druidical rites; and here we may incidentally remark that it is a curious and interesting circumstance now explicable, that in the heart of Continental Asia, on the borders of Upper Asia, and very far now from any sea, a tribe of natives exists in whose language there are various words etymologically connected with the sea and seaports. A kindred fact of a different description may be here briefly adverted to. In the *Asiatic*

* See letters of J. E. Dove on Symbols, in the *Builder* of 16th October, 1858, &c.

Journal of Bengal for 1853, p. 2, Mr. Hodgson, while speaking of the vast influence of the Himalayans in the distribution of mankind, states the remarkable fact that between certain tribes of the Sub-Himalayas and the inhabitants of the Caucasus mountains, which are separated by low countries, there is a strong affinity in language. To many such facts, we have not the least doubt, the geological evidence of the gradual development of the land above sea-level, from the glacial era downwards, will now be found to constitute a key, which will even fix relative dates, or epochs, in ethnological time, that will yet shed a brilliant light upon the pre-historical era of man.

The route of the dolmen-builders into Britain, according to Mr. Fergusson's important map, as we have said, is really the route of the races who first, after the glacial era, probably, migrated into Britain, when it must have first become habitable by a settled population; and this was especially the case with the southern districts of Cornwall and Wales, and the higher lands of Ireland, as the spread of the Silures and other dark races has shown; nevertheless, Mr. Fergusson urges, apropos of nothing but his undue desire to bring down the prehistorical and Pagan era of rude monuments within the limits of historical or quasi-historical record, that dolmen building was introduced into Britain, if not entirely originated, in comparatively recent ages. Whereas, since he himself has traced them from North Africa, through Spain and France to Cornwall and Wales, and to Ireland and Scotland, by the very route which must have been taken by the first settlers in Britain and Ireland after the glacial deluge, and before the lower lands appeared above sea level, it is much more probable that these first settlers brought their African dolmen-building propensity with them, whatever were its purposes; than that, in long subsequent ages, of comparatively recent times, both Britons and Africans should have taken it into their heads, either simultaneously or in succession, either one way or the other, to *commence* the Pagan practice of dolmen-building at the fag-end of the Pagan era.

Mr. Fergusson thinks that "the key to most of our mysteries is hidden in the African deserts," and he is not far wrong; but that key he has just missed finding; and it is no other than it that we now produce. Africa is clearly a great centre whence not only dolmens but other monumental forms, and especially concentric circled ones, emanated; although, probably, it had many of them in common with those of the aboriginal Asiatic continent, before the lower countries came above sea level.

In North Africa, as instanced by Mr. Fergusson, dolmens and other stone monuments, occur in tens of thousands, many of them of prodigious dimensions; and not only dolmens simply, but dolmens centred in concentric stone circles, one, two, three, and fourfold;* concentric stone circled tumuli crowned with dolmens; round towers in concentric circled series of walled masonry; cairns in "quadrangular enclosures" (to use words in the Druidical records); single stone circles; menhirs or single standing stones; even trilithons, exactly like those of Stonehenge; and various others. Mr. Fergusson may well say, therefore, that probably the key to many of our mysteries lies in the African deserts; and he himself points the way to the discovery of the extreme antiquity of these mysteries and these monuments, as a class, however many may have since come scattering down to less ancient times, and to lower levels of country.

In tracing so many of our crude Pagan monuments to the nearest continent, however, and to the earliest times, we must not overlook the fact that there were those other great sources already referred to,—of equal antiquity in themselves, probably,—in the continental high lands of Asia and Asia Minor; but these were certainly not the source, or at least the chief source, of the dolmens, though they, perhaps, were of the chambered tumuli. But the chief source of the simpler barrows was more probably that which flowed from Upper Asia by the Scythian and Teutonic route, through the great plain of Europe, where earth was more plentiful, and rocks were less so, than in the higher, earlier, and more mountainous and rocky routes. These tumuli of the Steppes of Asia were usually surmounted by a human figure called a baba, one of which is represented in Mr. Fergusson's book, with carvings behind of something like the V and Λ symbols crossing each other; one, Λ, the masculine symbol above, and the other, V, the feminine, below. A Russian barrow, on being levelled, was found to have, on the natural surface, a series of four concentric circles in stones (the genesis of our great circles, Mr. Fergusson thinks), with a central chair or kistvaen enclosed. There are stone circles at Caboul. Little seems to be known of the great Thibetan plateau, however, or even of its Himalayan and other mountain borders, especially the western, whence the barrow-rearers must have descended; but India is a great field for rude stone monuments, such as menhirs, trilithons, and dolmens, as in the hills inhabited by the Khassia tribes, and in the west of India, where there are also a variety of cairns, stone circles, and holed dolmens. Chambered tumuli and other forms of the Black Sea district, Lydia, &c., which probably emanated, originally, from Upper Asia, independently altogether, or nearly so, of glacial restrictions, through the plateaus of Persia and Asia Minor, came chiefly, it may be, by the southern or Aryan route, between the first or African descent and the third or North Asian ones; unless, indeed, they were a cross between the African dolmen and the Asiatic barrow, both in Britain and in Western Asia.

The fact (if it be a fact) that *certain* tumuli, kisted or not kisted or dolmened, stone circles, dolmens, or any other forms of gigantic Pagan monument were erected in the Christian era, or at the close of the Pagan era, either in Britain, or in Asia or Africa, and even were the proof clear and unquestionable in all such cases, is no evidence whatever that other monuments of a like order, or the main mass of such monuments, were not erected throughout the whole of the pre-historical and Pagan era, which is now clearly extended back to the glacial epoch,—probably 50,000 years ago. As regards one of the most ancient forms probably of all those introduced into the British isles,—the dolmens,—these were too hard a nut to crack; and really Mr. Fergusson has scarcely attempted it, but has swallowed the nut whole without cracking it at all. He has not even tried to show when any British dolmen ever was erected, unless in a failure to identify one of them,—"Arthur's Quoit,"—with King Arthur as an historical personage. There is truly nothing for us to disprove in this respect therefore, because there is nothing but mere assertion to meet. As regards the chambered tumuli, stone circles, &c., we shall have some remarks to make, as well as in connexion with the dolmens and kistvaens, when we speak of the probable purposes of such monuments. Mr. Fergusson considers these rude structures in general, with certain exceptions, as being sepulchral and also simulative of sepulchral rites, and as works of ancestor-reverencing or departed-spirit-worshipping peoples. Our remarks, affirmative and otherwise, we must make in another article.

* It is an interesting circumstance that among a set of photographs from Abyssinia in the Kensington Museum (but removed to make way for the Duke of Edinburgh's collection) there was one, which we have seen, including a series of concentric circles amongst other symbols; and that an Abyssinian church was described in the *Builder* during the war, which was built or arranged in concentric circles, the most holy place being in the centre, with an altar or ark there placed. It is notable, in reference to the concentric circles carved on rocks in Northumberland and Argyleshire, that these are on high land. An example, too, was found in Wales a few years ago. Doubtless, however, they were, in subsequent ages, carved on rocks or stones at lower levels, though their chief localities thus appear to have been on high land; and so long as that is the case, a few exceptions are of little or no force against the general principle, either as regards carvings or as regards megaliths. In reference to African circles, the slab from Carthage, with the circle and centre symbol on it, brought to the notice of the Society of Antiquaries by a member,—Mr. George Godwin,—and published in the "Archæologia," many years ago, is now more interesting and important than ever.

THE LATE MR. EDWARD WALTERS, ARCHITECT.

ON the 22nd of January, 1872, there died at No. 11, Oriental-terrace, Brighton, of pleurisy, in the 64th year of his age, Mr. Edward Walters, an architect who during a professional practice of about thirty years in the city of Manchester and its neighbourhood produced a series of important and most original works, which have imparted a marked character of dignity and picturesque effect to what was before an uninteresting, although an important, provincial city, and have achieved a lasting reputation for the accomplished man who produced them.

Edward Walters was born in December, 1808, at No. 11, Fenchurch-buildings, in the City of London. His father, Mr. John Walters, was a fellow pupil with James Savage, Joseph Woods (author of "Letters of an Architect from Italy," and the architect of the Commercial Sale Rooms, Mincing-lane), Whichcord the elder, I'Anson the elder, Ashpitel the elder (?), and Suter, in the office of Daniel Alexander. Mr. John Walters resided and carried on business at No. 11, Fenchurch-buildings, as was usual at that time. His principal work was the old Auction Mart, London, at the corner of Bartholomew-lane and Throgmorton-street, which was lately pulled down by the Estates Company, and the site is now occupied by the northern portion of the Alliance Bank. The Auction Mart was an imposing structure, but was very much disfigured by the subsequent addition of skylights in the roof. He also designed Shadwell Church, the tower of which is well proportioned, and St. Philip's Church, Stepney, built upon ground belonging to the London Hospital, of which institution he was surveyor. This latter building was one of the earliest attempts at the revival of Gothic architecture, and is a very creditable, although, of course, a very imperfect work viewed by the light of our present knowledge of Gothic art. Mr. John Walters died at a comparatively early age, leaving a widow, sister of Mr. I'Anson, senior, who survived him many years; a son, the subject of this notice; and a daughter, still living.

Edward Walters was educated chiefly at Brighton, and was a youth at school at the time of his father's death. He shortly afterwards came to London, and entered the office of Mr. Isaac Clarke, now of Lime-street-square, who had been a pupil of his father, and had then recently commenced business. He was not articled to Mr. Clarke, but remained with him for two or three years, and obtained the rudiments of an architectural education. His first professional employment after leaving Mr. Clarke was in the office of the late Mr. Thomas Cubitt, from whence he entered that of Mr. Lewis Vulliamy, where he was the contemporary of Mr. Owen Jones. He also for some time assisted the late Mr. John Wallen, and afterwards became assistant to Sir John Rennie, by whom he was sent to Constantinople in March, 1832, to superintend the building of a Small Arms Factory and some additions to the Arsenal for the Turkish Government.*

Mr. Walters remained at Constantinople until the completion of the works in 1837, when he returned to England, in company with his friend Mr. W. H. Barlow, the engineer to the Midland Railway Company, who had been sent out to superintend some works at the same place for Messrs. Maudslay. They left Constantinople in the month of August, 1837, visiting Smyrna, Malta, Sicily, and travelling through Calabria to Naples. Thence they went to Rome, Florence, and Pisa, and by Leghorn and Marseilles to Paris, arriving at Dover on the last day of January, 1838. The friendship which was thus early established between Mr. Walters and Mr. W. H. Barlow was continued with the greatest possible satisfaction to both, until Mr. Walters's decease. They frequently consulted each other upon points relating to their respective professional practice, and worked together with the most cordial feelings of amity. In 1860 they were associated in the laying out of a portion of the Midland Railway, between Ambergate and Manchester, of which Mr. W. H. Barlow was the engineer; and several of the stations on this line were built from Mr. Walters's designs.

It is evident, from a consideration of his works, that he must at some time have studied the proportions of some of the Italian palaces, particularly those of Genoa and Venice; but he does not seem to have made any admeasurements, the drawings which are preserved being coloured sketches, executed with considerable force, and the point of view selected with a just eye for effect. It is possible that if he ever made any drawings they may have been destroyed, as he was extremely jealous of his early drawings being made public, and frequently tore up his youthful designs when he came across them.

Whilst at Constantinople he made the acquaintance of the late Mr. Cobden, who, being at that time in ill-health, had undertaken a journey in the East for the purpose of recruiting his health, and at the same time to endeavour to obtain the secret of the method of producing the beautiful colour called Turkey Red, which is largely used in

* He made an elaborate design for a palace for the Sultan during his residence at Constantinople, a perspective of which was exhibited at the Institute. This design was never carried out, and this circumstance has, in all probability, led to the statement in a Manchester paper that he was appointed architect to the Sultan.

certain textile fabrics. With Mr. Cobden Edward Walters formed a warm friendship, and at that gentleman's suggestion he resolved to establish himself at Manchester, although at that time he had no friends in that city, but, on the contrary, all his relations and connexions were in the metropolis. He accordingly established himself, in 1839, on the ground-floor of No. 20 (now No. 24), Cooper-street, in which house he carried on business until his retirement, migrating only from the ground-floor to the first-floor, and there his business is continued by his successors, Messrs. Barker & Ellis. His energy of character, his strict uprightness, and genial manners procured him friends, and he eventually acquired a considerable practice, after passing through an interval of doubt and difficulty.

At that period most works of any importance in Manchester were entrusted to Mr. Richard Lane, whose designs were in the prevailing style of the early part of this century, strictly Classic, and founded on Greek models, — a style which Sir Robert Smirke made popular. Lane's most successful work is the Manchester and Salford Savings Bank, at the corner of King-street and Pall Mall. He also built the Town-hall, Salford; St. John's Church, Higher Broughton; and several churches and chapels, one of which, the Pendleton Independent Chapel (built in 1846), has a front designed "after the manner of Whitby Abbey, delineated in Sharpe's Abbeys of Yorkshire," and a cast-iron roof. Sir Charles Barry, who designed the Royal Institution in Mosley-street, erected in 1823, had just completed the Athenæum. Cheetham-hill Church was built by Mr. T. W. Atkinson, of London, in 1836–9, and the same architect designed the Manchester and Liverpool Bank, Spring-gardens.

The whole field of employment seemed barred to Mr. Walters; and, being a perfect stranger, his early life in Manchester was one of struggle and anxiety.

One of Mr. Walters's earliest commissions was a warehouse for Mr. Cobden at No. 16, Mosley-street. This is a plain, unpretending building; the ground-floor of stone, and the upper part of red brick, but although there is a certain refinement in the details which distinguishes it, it does not materially differ from other Manchester warehouses erected about the same time.

In the early part of his career he was chiefly employed in designing chapels and schools and residences in the suburbs of the ordinary villa type. In 1844, however, he built Oakwood Hall, a mansion of some extent of a Tudor character, upon the drawings of which he bestowed great care and study, most of them being drawn by himself.

It has been attributed to him by a contemporary that he designed some of the churches forming part of the scheme for building "ten churches" in Manchester proposed by the late Canon Stowell, but this does not appear to have been the case. Mr. Walters held aloof from the established clergy, but built several buildings for dissenting denominations, and had at one time a son of Dr. Halley's predecessor, Dr. McAll, for whom he built Cavendish-street Chapel, as a pupil. He did not ally himself, however, with any sect.

The same journal falls into the mistake of attributing the church in Grosvenor-square to Mr. Walters, which is not by him. He designed, however, the Free Church in Oxford-street, at the corner of Grosvenor-square, and this may have led to the error alluded to.

The first work that brought him into prominent notice, and developed his special talent, was a warehouse built, in 1851, for Messrs. Brown & Co., at the corner of Aytoun-street and Portland-street, and this was so pleasing in design, and so original in treatment, that the old-fashioned Manchester warehouse style was discarded, and Italian Renaissance buildings became the fashion. This warehouse was quickly followed by others in Portland-street, among which may be named that for Messrs. Kershaw, Leese, Sidebottom, & Co., Messrs. Jackson's, one at the corner of Lower Mosley-street (Mr. C. P. Henderson's), and others in the central part of the city.

By reference to the list of Mr. Walters's works given at the end it will be seen that his progress in his profession was at first slow. In 1847 John Dalton and Corporation streets were opened, and considerable improvement became manifest in the architectural character of Manchester. The Branch Bank of England, designed by Mr. Cockerell, was opened in 1847. The Royal Exchange was enlarged by Alexander Mills in the same year. In 1849 Sir Benjamin Heywood's Bank, at the corner of St. Ann's-square, by J. E. Gregan, was built, and other important buildings erected in the city. Mr. Walters soon obtained a considerable share of practice, and from about the year 1848 to 1860 was the leading architect in Manchester. He designed in succession a number of handsome warehouses, each in extent exceeding the majority of palaces, as well as numerous houses in the suburbs. In 1853 he obtained the Free Trade Hall in a limited competition. In 1860 he designed the Manchester and Salford Bank, in Mosley-street, a very charming composition, by some considered his *chef d'œuvre*, and in the same year the picturesque stations on the Midland Railway, among which may be specially mentioned those at Bakewell, and Miller's Dale, near Matlock, Bath. After 1860 his popularity to some extent declined in the face of the energy and determination of some of the younger members of the profession, and as he was of too proud and sensitive a nature to enter into what he considered a derogatory conflict with his brethren, he gradually withdrew from active practice.

With very few exceptions, the whole of Mr. Walters's works are founded on the style of the Italian Renaissance treated in the fullest, freest, and most intelligent manner. His earlier Gothic designs are poor and meagre, but the church in Cavendish-street is finely proportioned, and although the detail may not bear critical examination, it is a noble building, and will not suffer by comparison with any of the Gothic buildings of the same period. In all his compositions there is great breadth of design, a fine eye for proportion, a decided originality in combination, and a very careful study of detail. His work is throughout of the most conscientious character; it is the product of his own mind, and was carried out by his own hand. Of late years he was, however, greatly assisted by two gentlemen who became his partners, and ultimately succeeded him in his business on his retirement, whom he entirely reared and educated, sending them to study in Italy in order to qualify them for the position they were to occupy.

One of his last serious efforts in competition was a noble Classic design for the Manchester Assize Courts. This was not successful; and his want of success had a very painful effect upon his sensitive nature. He shortly afterwards retired from the active practice of his profession, resigning the business into the hands of his former pupils, Messrs. Barker and Ellis. He still, however, continued to take some interest in the practice of his successors, and only finally withdrew from a profession to which he was much attached, and in which he had so well and so intelligently practised in the year 1865. After this time he resided a good deal abroad, passing the winter generally in Italy, but making frequent visits to London.

Mr. Walters was singularly modest and unobtrusive in character, but his social qualities were of the highest order, and endeared him greatly to the many friends he found in Manchester, with whom he was on terms of the most cordial kind, as well as those who had known him in his youth. He was never married, and, although most courteous in his demeanour to women, he was not fond of female society.

He was most conscientious and laborious in his professional work, making a large number of his drawings himself, and altering and retouching frequently until the last moment. He was very particular as to the profile of his mouldings, upon which he bestowed great attention. Most of the warehouses in Manchester face to the northward, for the sake of the light, and on this account there is very little opportunity for obtaining any effects of light and shade upon those portions. For this reason the mouldings were, to some extent, exaggerated, and their proportions are slightly increased as they recede from the eye, in order to emphasise them, or, as Mr. Walters expressed it, to "make them read." This will account for, what may appear to those who are accustomed to the delicacy and reticence of the Italian prototypes of these buildings, an apparent coarseness of detail which is observable in his works. This peculiarity is more apparent than real, and is due to a careful study of the conditions under which the buildings were to be seen, and the dulness and opacity of the atmosphere at Manchester. There is in Mr. Walters's works in the city no attempt to obtain effect from the sky-line; the roofs of his city buildings are almost universally hidden, and they derive all their value from the judicious proportions of their masses.

Mr. Walters's integrity and sense of honour were of the highest order, and it is to the credit of the people of Manchester that these qualities were appreciated by them as they deserved to be appreciated. To Mr. Walters is due the credit for having introduced into Manchester the system of taking out quantities as practised in London, and the abolition of the equivocal relation that formerly existed between architects and builders in the matter of quantities. Formerly it was the custom for the bills of quantities to be prepared in the architect's office, and the charges were paid by the whole of the builders tendering. If the quantities were prepared by a surveyor, the architect received a commission upon the amount charged for them. Mr. Walters, by the force of his example, did away with this unsatisfactory state of things, and promoted a more honourable, and at the same time a more cordial, relationship between architect and contractor. A contemporary organ of the building interest (the *Builders' Trade Circular*), in commenting on Mr. Walters's death, remarks on this subject:—

"Mr. Walters was not popular among his brother architects and seldom associated with them; but he had the respect and confidence of the builders in a very marked degree. He was a strict man in having his work well done, and his plans and specifications faithfully carried out, but a man of rare integrity. If a contractor gained his confidence it was not easily shaken. Sometimes a greedy client would try to get more than he was entitled to. With weaker men this sort of thing too often succeeds; but in the hands of Mr. Walters the builder was safe. No fear of giving offence in any quarter prevented him doing justice to his tradesmen. He had a generous, warm heart, and his sympathies were strongly in favour of those who assisted him in carrying out his designs. He never failed to treat master or workman with kindly consideration, and the builders of Manchester entertain a profound respect for his memory."

The *Manchester Critic* of the 16th of last December, in a series of papers on Manchester Architecture, past, present, and to come, reviewed Mr. Walters's works, and dwelt justly on the influence of his taste and common sense upon the buildings erected in Manchester during the last thirty years. We reprint a small portion of it, though our earlier volumes contain full reviews of his various works:—

"There can be no doubt that Manchester architecture must be criticised, and its quality estimated through the medium of its warehouses; those huge receptacles of manufactured goods, the buying and selling of which constitute what is commonly called 'the Manchester trade:' in fact, Manchester is unmistakably a city of warehouses; the architectural character of the town is mainly derived from these buildings, inasmuch as the effect of whole streets depends upon their architectural treatment. The rebuilding of the old square-block warehouses inaugurated a new era in the history of architectural art, and opened out a wide field for the display of artistic powers, and an expenditure of money, the result of increased commerce and a livelier appreciation of the beautiful and of the refining influences of art.

The task of inaugurating this new era in art devolved upon an architect whose name will always be held in esteem by his professional brethren, and whose genius will, we think, be acknowledged by succeeding generations of his fellow citizens;—to Mr. Walters, indeed, Manchester owes a debt of gratitude for the wonderful change which he wrought in the appearance of the town, and for the respect which he won for the enterprise and spirit of Manchester merchant princes. The time was ripe for such a revolution in artistic thought, and Mr. Walters came upon the scene with an educated mind and a refined intellect, and the results soon become apparent as one after another, with astonishing rapidity, his stately piles reared themselves in our midst.

We well remember the surprise and wonder excited by, we think, his first great warehouse, the one built for Messrs. Brown & Co., at the corner of Aytoun-street and Portland-street: the style was new; there was a freshness and purity about it which quickly took hold of men's minds, and the building of Italian warehouses became almost a rage. This warehouse was quickly followed by others in Portland-street, including the one for Kershaw, Leese, & Sidebottom, one at the corner of Lower Mosley-street and Oxford-street; then followed the Free Trade Hall, the Manchester and Salford Bank, and many other buildings."

This article was written during Mr. Walters's lifetime, and the same paper, referring a few weeks afterwards to his decease, spoke in feeling terms of Mr. Walters's ability, and concluded with the observation:—

"It always seemed a cause for regret that Mr. Walters, when engaged in active practice, did not mingle more intimately with his professional brethren; but no doubt on account of the unfortunate relations and petty jealousies existing among members of the profession in this city this retirement is to be accounted for. Mr. Walters has passed from among us respected by all with whom he came in contact, and leaving the mark of his genius in lasting monuments in the streets of Manchester."

The work upon which Mr. Walters's fame will chiefly rest is, the Free-trade Hall in Peter-street, the scene of the "Peterloo massacre" in 1819, and then called St. Peter's Fields, which was inaugurated on October 9th, 1856. It was built on the site of a hall of the same name, in which the Anti-Corn Law Meetings were held. It was erected by subscription among a very

limited number of residents in Manchester, and cost 25,000*l.* without fittings. The hall is 135 ft. long, and 78 ft. wide, and only 52 ft. in height. It was originally intended to be 64 ft. high, but acoustic considerations induced a curtailment of its proportions. In addition to the hall proper there is an assembly-room, 76 ft. by 37 ft., and 28 ft. high, approached by a separate staircase, with a supper-room over, a drawing-room, 40 ft. 6 in. by 24 ft., and other apartments. The principal front measures 153 ft. and the total height is 75 ft. The entire building covers an area of 2,300 square yards. The galleries will accommodate 754, and the floor of the hall will seat 3,156 persons, making a total of 3,910 persons, allowing 18 in. of seat to each individual.

There is a view of the principal front of this building in the *Builder* for 1856, vol. xiv., p. 526, and another view in the *Illustrated London News* for October 11th, 1856, which was taken from the drawing exhibited at the Architectural Exhibition in 1856 (No. 14).

Mr. T. Roger Smith, in his useful essay on the "Acoustics of Public Buildings," in "Weale's Series," founded on a paper read at the Institute of Architects, in 1860, refers to the Free Trade Hall as "one of the best examples that can be presented of a successful public room of the largest size." He proceeds to describe the means that have been taken to prevent echo at the end of the hall, and remarks:—

"This room, when empty, possesses a good deal of sonority, but when full is excellent in the extreme, either for music or public speaking. The amount of resonant material employed is not great, although there is a good deal about the orchestra, the part of the building where it will be of most service. Considerable resonance is, however, produced by the large space above the ceiling, and by the fact that there is a hollow space under the floor. The included mass of air is probably also nearly as large as could be safely set in motion; so that, in all probability, the architect of this hall may be considered to have approached as closely as was either salutary or safe that limit of capacity or sonority, to have exceeded which would have spoiled the success of his undertaking."

The dimensions of the Free Trade Hall are, length, 135 ft.; width, 78 ft.; height, 52 ft. (originally intended to be 64 ft.); so that, as Mr. Smith observes, the height bears exactly to the width and approximately to the length the simple numerical relation of 2 to 3 and 2 to 5, the unit being 26 ft. The total cubic content may be roughly stated as about 500,000 ft.

The published illustrations of Mr. Walters's works are not numerous. Amongst them are illustrations of the Chapel in Cavendish-street, built for Dr. Halley, an Independent minister of some reputation in Manchester, given in the *Illustrated News* for 1849, vol. x., p. 181, and in a periodical which had but a brief existence, the *Architect*, 1849, vol. i., p. 339. The Cavendish-street Schools are illustrated in the *Builder*, vol. vii., page 103.

In the notice accompanying the engraving in the *Illustrated London News* no mention is made of the architect, although it is evident from the accuracy of the description that the particulars must have been supplied by him.

There is a view of the Free Trade Hall in the *Illustrated London News*, October 11, 1856, but, it does not do justice to the building; the vigour and solidity of the original being quite lost.

There is no good view of the interior of the hall published. An attempt has been made to photograph it, but it has not been successful. There are a plan and section of the hall engraved in Mr. T. R. Smith's "Acoustics of Public Buildings."

An illustration of Messrs. Kershaw's Warehouse, Portland-street, is given in Knight's "Companion to the Almanack," 1854, p. 258.

Mr. Walters was a frequent contributor to the Architectural Exhibition. The first exhibition was held in 1849, but his name does not appear as an exhibitor. In 1850, when the exhibition was held at the Suffolk-street Gallery, he exhibited a garden elevation of a Mansion proposed to be built near Manchester (52); Oldham-road Chapel, Manchester, described as then building at Manchester (125); Entrance-gate and Lodge to Beechwood Hall, Cheshire (131).

In 1852 he exhibited a House for Mr. J. McLaren, at Manchester (28); a Warehouse erected at Manchester for Messrs. Callender, Sons, & Dodgshon (72); a House at Rivington Pike, near Bolton, for Peter Martin, esq. (82); Messrs. Brown & Co.'s Warehouse, then building (153). In 1854–5 he did not exhibit. In 1855–6 he exhibited a group of Commercial Buildings lately erected in Manchester. In 1856–7 he exhibited a composition of buildings, lately erected at Manchester (1); the Free Trade Hall, Manchester (14); and Warehouses, Marsden-street, Manchester (105). In 1857–8 and 1859, his name does not appear in the catalogue. In 1860 the Manchester Assize Court competition took place.

Mr. Walters does not appear to have contributed to the Architectural Exhibition after the year 1856–7. He had a strong dislike to exhibiting designs, and when urged to do so, generally refused, alleging that designs gave no idea of the appearance of a building when finished, and that when completed he would have the building photographed.

Mr. Walters was a Liberal in politics, and an ardent Free-trader. He was one of the promoters of the *Morning Star*, the organ of the Manchester School, which, although it did good service in familiarising the country with the doctrines of its party, was unsuccessful as a newspaper. Mr. Walters lost what money he had invested in the undertaking, but was proud of the sacrifice he had made for the sake of his principles. He was, however, as a rule, extremely reticent with regard to himself, and was averse to expressing his opinions openly, although he felt deeply upon public questions. Almost his only London work, which he obtained through this connexion, was the offices of the *Morning Star*, in Dorset-street, Fleet-street, erected about 1856, the date of the establishment of that paper.

The following is a list of Mr. Walters's principal works, for which we are indebted to Messrs. Barker & Ellis. The list is, however, incomplete, and does not include some of his early designs and alterations, nor buildings not strictly of an architectural character:—

1839.—Residence for Mr. E. Lloyd.
1841.—Union Chapel; Scotch Kirk, Manchester.
1842.—Granby-row Church; Queen's Hotel; Broughton-road Chapel and Schools.
1844.—Oakwood Hall, for Mr. Ormrod Heyworth; St. Andrew's Free Church, Oxford-street, corner of Grosvenor-square.
1845.—Warehouse for Mr. S. Schwabe; Residence for Mr. T. Critchley; Darwen Chapel and Schools; Scotch Kirk, Bolton.
1846.—Residence for Mr. Whitlow.
1848.—Warehouse for Mr. Thos. Cooke; Residence for Mr. Thos. Ridgway; Residence for Mr. W. Morris; Blackpool Chapel.
1849.—Oldham-road Chapel; Stockport Chapel; Middleton Schools.
1850.—Residence for Mr. J. Leigh; Residence for Mr. J. McLaren, Whalley Range; Residence for Mr. Peter Martin, Rivington-Pike; Residence for Mr. W. Hadfield.
1851.—Warehouse, Portland-street, for Mr. Jas. Brown; Warehouse, Charlotte-street, for Messrs. W. R. Callender; Residence for Mr. Wm. Bellhouse; Residence for Sir Joseph Whitworth.
1852.—Warehouse, Portland-street, for Messrs. Kershaw, Leese, & Co.; Residence for Mr. Henry Bury; Residence for Mr. J. Leese; Residence for Mr. E. R. Langworthy; Billiard-room for Mr. T. B. Potter; Residence for Mr. W. J. Tate; Knott-mill Chapel.
1853.—Free Trade Hall (opened in 1856); Warehouse for Messrs. Gruner, Schmidt, & Co.; Residence for Mr. Jas. Brown.
1854.—Warehouse for Mr. C. P. Henderson.
1855.—Warehouse for Mr. Wm. Atkinson; Warehouse for Mr. J. C. Harter; Warehouse for Messrs. Jones, Brothers.
1856.—Warehouse for Messrs. Beaver, Higson, & Co.; Warehouse for Messrs. Williams, Scott, & Co.; Residence for Mr. Peter McLaren, Irlam.
1857.—Manchester and Salford District Bank, Warrington; Residence for Mr. J. Williams.
1858.—Warehouse, Portland-street, for Messrs. E. & J. Jackson.
1859.—St. Helen's Bank; Ashbury Carriage Company's Works; Residence for Mr. T. Ashton, Didsbury.
1860.—Liverpool, London, and Globe Insurance Office, King-street; Manchester and Salford Bank, Mosley-street; Residence for Mr. T. Wrigley; Buxton Station, Bakewell Station, Longstone Station, Miller's Dale Station, Rowsley Station, and Hassop Station, on the Midland Railway; Manchester and Liverpool District Bank; Warehouse for Mr. E. R. Langworthy; Warehouse for Mr. Leo Schuster; Residence for Mr. E. Boden; Residence for Mr. G. Crosfield; Lymm Chapel.
1861.—Warrington Public Hall; Southport Chapel.
1865.—Warehouse for Mr. Dewhurst.

ARCHITECTURAL DRAWINGS, ROYAL SCOTTISH ACADEMY.

ARCHITECTS, here as elsewhere, meet with but scant justice at the hands of their fellow artists, the painters. If a small space at either side of the entrance to the galleries is allotted to architectural drawings, it is talked of as a good-natured concession to a kind of thing which is only by courtesy called art. The architect has more intractable materials to work with than the painter, but form and composition, light and shade, are as essential requisites to the successful performance of the one kind of work as the other. That a moderate degree of success is more easy of attainment with the brush and palette than with the square and compass, is shown by the fact that several exhibitors of paintings in these galleries began their career as architects, but we cannot point to a single example of the converse. The painter, too, is indebted for much of his material to the architect, as is shown by the considerable number of views of purely architectural subjects exhibited; and although it may be pleaded that these are, in great measure, indebted to the mellowing hand of time for their artistic value, and that the new works lack that interest, it may also be safely predicted that the new work will, in the course of time, be as suitable and as eagerly appropriated by a new race of artists.

The sister arts should go hand in hand, each lending grace to the other, and then we shall find, as in the palmy days of old, the walls of our public halls covered with works of high art. Mr. Dick Peddie is the first architect in Scotland who has taken a step in this direction. "The Telling Room of the Royal Bank of Scotland," of one side of which we are presented with an elevation (768), is an elegant apartment, square on plan, and lighted by a dome supported upon four strongly pronounced arches. The details are simple, and effect is sought for by covering the broad wall surfaces with coloured decoration, and introducing four large paintings in the upper section of each arch, a much more artistic proceeding than loading the surface with plaster casts, as has been the practice hitherto in similar works. No. 779, "Interior of Inverness Cathedral, Alexander Ross." This edifice consists of a nave, with aisles, clearstory, transepts, and apsidal choir, covered by a wagon-roof. The pillars are of red granite, and the roof richly decorated in colour. The effect is pleasing, but exhibits no particular marks of originality. No. 812 is a view of the exterior, showing two spires at the west end, a flêche at the intersection of the crux, and an octagonal chapter-house. Nos. 781 and 822 are drawings of the exterior and interior of a new church, Wood-green, Staffordshire, by Edward Francis Clark, who seems to have a thorough knowledge of Gothic details, and, by a skilful combination of such, produces a happy result.

No. 780, "Design for a proposed Free Church," John Honeyman. Why a Free Church should be made to appear outwardly as if it had a chancel is to us a mystery. We know of one example where such an anamorphosis has been perpetrated, and it produces no small shock to one's preconceived ideas, when, upon entering the building, the pulpit is seen at the opposite end to what appeared a chancel, and that that portion of the interior is fitted up with pews in the ordinary manner. An architectural work may be either the visible expression of the ideas of the designer, or it may be a composition produced by grouping together old forms. Mr. Honeyman seems an adept at the latter and more easy mode of procedure; for both as to detail and general effect the design is far from being unpleasing, like the poetry of those who,—

"Haunt Parnassus but to please the ear."

No two buildings could be more unlike than this and No. 787, "St. John's Free Church, Leith." There is no mistaking it for anything else than a Dissenting chapel. The fact that the interior is fitted up with galleries is apparent by a double tier of windows, and is emphasised by the stair leading thereto being indicated by a glazed arcade which follows its slope. A tower at the south-west angle is terminated by an open crown formed by eight flying buttresses meeting in a point: this feature has a poverty-struck wooden character about it, the lower tier of windows are unpleasantly near to the ground, and the upper tier terminate in gablets which are overwhelmed by an unnecessary parapet. The building is altogether too pretentious. No. 824, "St. Luke's, Dumbarton," Robert Anderson, is quite another affair; it is an Episcopal church, and looks like one. Nothing is overdone, and a satisfactory feeling of appropriateness and repose pervades the interior. The only peculiarity about it is that the side aisles are without lights, and are kept narrower and lower than is usually the case, and a greater height is consequently given to the clearstory. This, we think, a satisfactory arrangement, the light coming from above producing a fine effect. Mr. Anderson has restored the parish church of St. Vigeans in a satisfactory manner; it is a Mediæval church appropriated to Presbyterian worship; but instead of fitting up the chancel with pews, Mr. Anderson has set aside that space for the choir, and has placed the pulpit at one side, and not in the middle, as is usually done in similar circumstances.

No. 808 is a very grand "Design for a Scott Memorial Hall for the University of Edinburgh," by Adolph Emil Melander. It is after (a long

way after) the Ducal Palace at Venice, is spanned by a vast roof, out of which crop towers and pinnacles, turrets and canopies, producing a wonderful sky-line. How these features are to be supported is a mystery which a view of the interior could hardly solve. We doubt if the designer has made the attempt. No. 783, "Design for a Town-hall," William Nicholson, and No. 796, "Design for a Club-house," by the same, are common-place in the extreme, without a new feature in combination. No. 793, "Rosehaugh House, Ross-shire," as designed by Mr. Alexander Ross, is a Renaissance mansion, with a large display of plate-glass, and would be as inappropriate in the North as No. 814, by Messrs. McGibbon & Ross, a turreted Scottish baronial mansion, would be out of place in the New Forest, Hants, where it is proposed to erect it. The Renaissance mansion has a tower with a heavy-looking roof, which crushes it into an appearance of humility towards the mountains of the north; but the Scottish intruder asserts his nationality by thrusting aloft a series of lanky turrets. "*Honi soit qui mal y pense.*" Cortachy Castle, Forfarshire, which is now in course of being restored by Mr. David Bryce, and of which a south-west view is given (831), is a very fine example of a Scottish baronial mansion. The main portion of the building is symmetrical, and not broken up into numerous small features, as is too often done in modern imitations, such as No. 813, "Threave House, Kirkcudbrightshire," by Mr. C. G. H. Kinnear. An outside stair, supported upon a semicircular arcade, is a happy feature, and so is the clock tower in the angle; but the sky-line to the right of the tower is hard and unsatisfactory, and appears to have been done at a later period than the rest of the buildings.

Mr. William Leiper has in "Colearn, Perthshire" (825), given a new and appropriate expression to this style. It is difficult to point out wherein this design differs from many others lately produced; we can only say that it possesses a distinct individuality, and has that something about it which characterises the works of the new school of Gothicists. It is homely and comfortable-looking, and elegant without being pretentious.

No. 794, "Villa for Alex. McLaurin Monteith, esq., South-side, Edinburgh," Fred. Thos. Pilkington. This is the first instance we know of where Mr. Pilkington has stooped to use the vernacular villa architecture. Of its kind it is good, but that kind is very stale and uninteresting.

No. 821, "New Asylum, Lenzie," being erected for the Barony parish, Glasgow, by Messrs. Salmon, Son, & Ritchie, architects, is one of those widely scattered groups of buildings to which it is very difficult to impart artistic effect. No. 833, "Memorial Cross," to be erected by friends and pupils of the late Mr. John Charteris, Wamphray, is an appropiate Christian memorial. The sculpture represents the "Tree of Life and the Dragon bound," treated after the manner of the decoration on Runic crosses. Mr. J. B. Pirie is a clever draughtsman, and presents us with "An Architectural Idea" (823), a church with deeply-recessed windows, and much carving, to produce which would necessitate a larger outlay than can usually be commanded. The composition around the base of the tower is too crowded for good effect.

ON JAPANESE ART.

THE Japanese have, for thousands of years, worshipped at Nature's shrine, watching her every movement, and noting every change of mood and costume with a loving eye, until each detail of her marvellous handiwork and each expression of her changeful face are imprinted on their minds, to be transferred to every work they set their hands to do. These words may strike you as being too strong, but I can assure you that a careful study of Japanese art will convince you that the Japanese artist is, perhaps more than any other, a devoted worshipper of Nature, and delights in nothing so much as in depicting her works.

In the animal and vegetable worlds he is ever seeking for expressive action or lovely forms and combinations of colour; and when satisfied with his research, how boldly and truthfully he depicts what has pleased his fancy,—sometimes with his thumb and finger dipped in ink; sometimes with double brushes held in one hand, and used together with marvellous dexterity; or, sometimes, with a laboured delicacy which makes us attempt to calculate the time expended, and, as is most frequently the case, break down in the calculation.

Another remarkable trait in the character of the Japanese artist is his keen appreciation, and indeed intense love, for the humorous and grotesque. This is evidenced in his drawings, and more particularly in his ivory carvings. This fancy leads him very often into broad caricature, and into the representation of positively indecent subjects.

Of all the objects adopted by the Japanese artist for ornamentation, the most beautiful are birds and flowers; and those over which he is least artistic are human figures. It appears that in depicting the human form the artist acknowledges some rules which restrict his fancy and neutralise his accurate observation. He submits to a conventionalised type, and goes on in one groove all his days. Notwithstanding this fact, great power and breadth of treatment are observable in his drawing of drapery; and in many instances one observes that action and *pose* have been well considered and carefully rendered.

In colouring, the Japanese are, generally speaking, very skilful, adopting a quiet and refined style, and using full low-toned colours in preference to excessively brilliant ones. In this they differ from their neighbours, the Chinese. Of course I do not wish you to understand that the Japanese artists do not use bright colours, for few men know their value better; but what I desire to convey is that they use them judiciously, and in comparatively small proportions, cleverly supporting and contrasting them with the secondaries and other compound colours they use in grounds in large masses generally.

Much as we may admire the marvellous skill and delicacy of manipulation the art-works of Japan display, as artists ourselves, we must feel that we are constrained to more fully admire the exquisite feeling set forth in the designs of their ornamentation; and it is rarely that one can detect any hardness imparted to the designs through their laboured execution. This clearly proves that the workman is in all cases the artist, and that he is not merely reproducing in his peculiar material the designs created by the fancy of others. In Japan, therefore, we find in every branch of art-manufacture what we so much want in our own land,—the artist workman. Combined with his artistic feeling, the artizan of Japan shows the greatest skill in manipulating the almost countless materials he presses into his service. We are informed that his tools are few, and of the simplest description; and personal inspection of the collection of native implements in Siebold's Museum, at Leyden, certainly corroborates this statement. It is a matter, therefore, of no small wonder how the Japanese workman can produce such absolute perfection of finish. The greatest possible dexterity of hand must be cultivated, along with accuracy of eye; and time, that bugbear of the West, must be held in small account in the production of his art-works.

The power of delineation displayed by Japanese artists is unquestionably great, and although they sometimes resort to careless and off-hand methods, they can display the greatest delicacy of touch, combined with the most perfect freedom. I have one example of this, a bird resting on a spray with leaves and flowers, executed in Indian ink. There is not a particle of outlining in this sketch, each feather, branch, leaf, and flower-petal being executed with a single application of the brush, a few dark lines on the bird and leaves, and a few dots completing the drawing. Notwithstanding the simple means and hasty manner adopted, the result is truly beautiful, and so expressive that nothing seems wanting to the eye.

It seems strange that so much could be told by half a dozen up and down brush-strokes as is plainly told in the simplest Japanese sketch: but let the artist have a clear idea to set forth, and he will never fail to do so, even in so humble a material as a grass blade. Nothing can exceed the grace infused into their representations of grasses, wild flowers, and creeping plants. Let any one who questions this, examine their ordinary illustrated books or the paintings often found on their beautiful Satsuma Ware.

With such materials as grasses and creepers they seek to display the graceful negligence of Nature. When they desire to show her strength and vigour they depict the stately iris with its erect sword-blades and curling plumes; when they wish to show her lavish richness they throw down showers of long drooping purple racemes, or cover the picture with a profusion of giant chrysanthemums, or the beautiful rose-like flowers so much prized by the Japanese.

In addition to the flowers mentioned, the lily, the lotus, the carnation, the convolvulus, and numerous other creeping plants are very commonly represented.

Trees are also favourite subjects with Japanese artists, and those most frequently observed are the palm, the fir, a tree bearing dense masses of white flowers, and another of spiky character, bearing white flowers and pink buds. The native name for the last tree, I am told by a Japanese gentleman, is *Oumoi*: it bears fruit somewhat similar to our greengage, but is evidently not prized on that account, the fruit never being depicted.

Perhaps of all the trees the fir is most often used, and the reason for this may be that it is held in considerable esteem on account of its constant verdure and the great age which it is supposed to attain before it dies. The superstitious amongst the Japanese believe that the fir-tree exercises some influence over the happy events of human life.

Equally with the fir, the bamboo is much used for decorative purposes, and indeed it appears to be held by the superstitious in similar veneration, and for similar reasons. The straight ascending habit of the bamboo, rendered unmonotonous by its frequent jointings, and its effective crown of foliage, have no doubt been the principal inducements for the artists to adopt it, and they certainly make good use of it, depicting its jointed stem, with an occasional leaf, on narrow upright spaces or such like, and its spreading foliage and graceful leaves on panels or other broad fields.

By all accounts the Japanese are passionately fond of dwarfed trees and shrubs, and their gardeners are remarkably skilful in the art of dwarfing. Such things as perfect trees, full of foliage and blossom, only a few inches high, are not uncommon. Meylan is stated to have seen in Japan, in the year 1826, a box 4 in. long, 1½ in. wide, and about 6 in. high, in which were growing and in healthy condition, a fir, a bamboo, and a plum-tree in full blossom.

In the miniature gardens which are commonly attached to the better-class houses in the towns, dwarf trees, a few feet high, are usual objects. This taste for dwarfing has led to the diametrically opposite taste for unnaturally increasing the size of trees and flowers. Firs are reported to be seen in the country, of gigantic proportions, and some fruit-bearing trees with blossoms as large as good-sized cabbages. Vegetables are likewise cultivated until they attain enormous size.

The Japanese also delight in bouquets of flowers and branches, with which they ornament the interior of their simply-ordered apartments on all festive occasions. I said bouquets of flowers and branches; but the latter ought to have been placed first; for branches, and wild-looking, distorted ones, too, figure largely in their composition. The Japanese construct their bouquets decidedly in a more artistic manner than does any other nation under the sun.

They frequently represent bouquets on works of porcelain and lacquer,—and what charming objects they always are! Dwarf trees and clusters of giant flowers are associated together without the least attempt at symmetrical arrangement: indeed, anything like uniformity or balance is studiously avoided in these groupings. A piece of bamboo sometimes rises vertically from amidst the flowers, with a stray leaf or two of its own, a delicate creeper twining round it, or a slender branch of some choice plant, stuck through a hole in its side, and deriving moisture from water contained within; or, when the bamboo is of considerable size, with a perfect miniature fir or oak tree planted in soil contained in the top joint, and flourishing as luxuriantly in its way, as its friends of the mountain. So far, we have a picture of the mild type of Japanese bouquets; but there is another, which may be termed the wild type, and, to me, the most interesting and artistic. This consists of dwarf trees, gigantean flowers, bamboos, &c., as before, with the startling addition of the most contorted and gnarled branches which badly brought-up trees might be expected to supply. These branches are sometimes devoid of foliage, or, at others, carry quaint tufts at their extremities, and, being so fantastically twisted, they wander about the bouquet in the most erratic manner; or, when of an independent turn, strike off, tufts and all, yards from the vase in which they are planted.

Before leaving the subject of vegetation and its use in ornament, I may mention that the Japanese adopt a great variety of conventionalised floral forms in the construction of diapers, powderings, and such-like enrichments, where they cleverly combine them with purely geometrical patterns.

Next to vegetation, the artists of Japan are most skilled in the representation of birds; and they appear to have an equal love for depicting them. Here, again, we detect their painstaking and enthusiastic course of study, by the care and accuracy with which every action and favourite position of their birds is rendered.

It is principally in their porcelain, lacquer, illustrated books, and original drawings that we find the best specimens of their skill in this department; but I have frequently seen rare examples in their metal-work. Let the material, however, be what it may, wherever there is a bird there is food for our study and cause for our admiration.

A law existed in Japan, and, no doubt, does now, that no firearms should be used within a radius of thirty miles from the Imperial Palace; and this encouraged, to a great extent, the sport of falconry, and consequently the taste for depicting scenes from it. The screens which the Japanese use so commonly in their dwellings as temporary partitions, are very frequently painted with such sporting scenes; and many books are published entirely devoted to falconry. Both in these paintings and in illustrated books we find countless evidences of their skill in bird-drawing, and every conceivable position of the falcon and its quarry delineated. I possess two books on falconry, containing many woodcuts of great interest.

The birds most frequently represented by the Japanese artists are storks, tame and wild ducks, wild geese, pheasants, ravens, hawks, falcons, and cocks and hens.

The stork is held in a sort of semi-veneration by the Japanese, and adopted by them as the emblem of longevity. For these reasons, it is one of their most favourite objects, and is used as an ornament throughout the entire range of their arts. It is impossible to imagine any position which storks can assume that is not depicted by the Japanese artists, and it is likewise impossible to realise anything more artistic than their manner of treating them.

There are two birds, one a variety of the pheasant, and the other a species of tame duck, called *Kinmodsui*, which, from their extreme beauty, form favourite studies for Japanese artists.

The Japanese appear to have only one chimerical bird, which, they believe, dwells in the high regions of the air, and descends, to bless the earth with its presence, only on the birth of a great emperor or some such extraordinary occasion. The name of this bird is *Foo*, and it is represented in art like a bird of paradise, with excessively rich plumage. This bird is not so generally introduced in art as the natural birds; and it appears to me that it is always in some way connected with royalty, and alludes to some remarkable event when it is introduced. Representations of this bird occur on several pieces of enamel in the possession of my friend Mr. James Lord Bowes, and are almost in every case associated with insignia of royalty, the most usual being that of Taikosama, the first secular monarch of Japan, A.D. 1585-91. I have seen the *Foo* several times on porcelain, and in a few instances in lacquer-work,—one is on the top of a superb cabinet, also in the possession of Mr. Bowes, and another on a cabinet in my brother's collection.

Kæmpfer remarks:—"Considering the largeness and extent of the Japanese empire, it is but sparingly supplied with four-footed beasts, wild or tame. The former find but few desert-places, where they could increase and multiply, and follow their usual shy way of life. The latter are bred up only for carriage and agriculture. Pythagoras's doctrine of the transmigration of the soul being received almost universally, the natives eat no flesh meat; and living, as they do, chiefly upon vegetables, they know how to improve the ground to much better advantage than by turning it into meadows and pastures for breeding of cattle." Such being the case, we cannot be surprised that natural animals are comparatively seldom depicted in their art-works. The horse is certainly often met with, sometimes alone, but more frequently with its rider, and always treated skilfully.

The elephant is represented in the Buddhist temples, no doubt in allusion to India, the birthplace of that faith; and when it is used in other works of art, it is no doubt with some kindred idea.

I do not remember ever having met with a single representation of a natural lion in Japanese art, but have seen a few tigers, although indifferently well done. The Japanese frequently represent a chimerical animal somewhat resembling a lion, commonly called by us the Kylin; but what their ideas are in connexion with this animal I have been unable to clearly ascertain.

The most important of the fabulous animals of Japan, and the one most frequently represented in art, is the dragon. Kæmpfer says:—"The chronicles and histories of their gods and heroes are full of fabulous stories of this animal. They believe that it dwells at the bottom of the sea, as in its proper element. They represent it in their books as a huge, long, four-footed snake, scaly all over the body, like a crocodile, with sharp prickles along the back, but the head is, beyond the rest, monstrous and terrible. Some of the Japanese emperor's cloth, his arms, scimitars, knives, and the like, as also the furniture and hangings of the Imperial Palace, are adorned with figures of this dragon, holding a round jewel or pearl in the right fore-claw. The Japanese dragon hath but three claws on each foot, whereby it is distinguished from the Chinese Imperial dragon, which is represented with five."

Foxes, monkeys, bears, dogs, cats, rats, rabbits, and frogs are amongst the animals most commonly met with in works of Japanese art; and although generally cleverly rendered, deserve no special remark.

A great variety of fishes are favourites with Japanese artists, and are invariably well drawn. Fish is one of the staple articles of food in Japan, and the fisherman's trade is held in considerable esteem by the people. Both these facts have operated largely in making representations of fish, and indeed all marine productions, very popular objects of art.

The different ways in which fish are introduced by the Japanese artists are positively countless, but there are four ways which are more common than others, namely:—As dead and lying singly, or in twos or threes, across each other; as alive and swimming amidst curling waves; as in the act of being caught by the expert fisherman by rod or net; and as in the act of ascending a waterfall.

The sea-tortoise or turtle in its natural form is occasionally depicted, but in art we more frequently meet with a fanciful modification of it. This consists of a tortoise, with a long and broad tail of hair issuing from the hinder half of its body. In this form it is called *Mooke* or *Minogame*, and is looked upon with considerable veneration as the emblem of long life and happiness. It is introduced in the ornamentation of screens and walls of the temples and palaces of the Japanese, and represented by their artists in every branch of their work.

Cuttle-fish and shell-fish of all sorts are adopted by the Japanese, and executed with great skill in metal-work, ivory carving, lacquer-work, and painting.

Insects are frequently represented, but generally in connexion with other and more important objects. Fruit and leaves, for instance, are sometimes shown partially eaten by insects; and we generally find a specimen of the depredators, in the act of eating, shown along with them. It is also common to find insects and birds together; and a spider with its web stretched between the branches of a shrub, is also a favourite ornament; and should we find a fallen leaf supported by the web, we need not ask why the artist put it there,—it is only a way he has of telling us what a strong thing a spider's web is.

I have said as much as I dare say at the present time with regard to objects of animated nature. I shall therefore add a few words upon the most characteristic inanimate objects, utilised for art purposes by the Japanese, and pass on to the consideration of the several departments of art manufacture and their peculiarities.

The chief of all the inanimate objects utilised for art purposes by the Japanese, is the beautiful mountain, *Fusiyama*. This mountain is one of the most common illustrations in books, on porcelain, and on lacquer articles. It is nearly always represented as it appears from the suburbs of Yeddo, with its sharply-defined sloping sides and crown of snow. *Fusiyama* is an extinct volcano. The latest eruption on record was in 1767. It is considered sacred by the natives, and religious pilgrimages are made to it.

Rocks, with waterfalls, or waves of the sea breaking over them, are often represented by the Japanese in the charming little pictures they paint on their porcelain and lacquer-work. And driving rain, softly-falling snow, or a boisterous gale, appear to give great scope for the graphic delineation of these cunning craftsmen. Their way of representing a mist at sea is very amusing, positively nothing being shown but a few straight and curved lines, shaping upper portions of masts and sails. Imagination supplies the mist which obscures all the rest of the vessel.

Sunset and moonlight are also very favourite representations, and are always cleverly rendered.

Clouds are almost invariably present in landscapes, or, indeed, almost every open-air scene, but are never well drawn. The attempt to flatten them to meet the requirements of decorative art is almost a universal failure.

There are countless other objects which are pressed into the service of the decorative artists of Japan, and I shall allude to many in the remaining portion of my paper: it is, however, impossible for me to describe them all, and, as I have mentioned the most prominent, it is not at all necessary.

G. A. AUDSLEY.

THE ENSUING IRISH EXHIBITION AND ITS PROSPECTS.

THE first general Irish Exhibition, it may be remembered, was in the year 1853, following close upon the great English or polynational one of 1851. The one in the sister kingdom had its impulse and certainty in the princely liberality of one man, Mr. William Dargan, a well-known railway contractor, since deceased, who on the 24th of June, 1852, placed at the disposal of the Royal Dublin Society 20,000*l.*, which he subsequently increased by an additional 6,000*l.* towards defraying the expenses. It was opened in May by the Lord Lieutenant, and in the following August her Majesty, Prince Albert, and the Prince of Wales visited it. During its continuance, which lasted within a few days of six months, it was fairly patronised; and, on the whole, considering that it was the first of its kind and defective in many of its arrangements, the receipts were large, but not large enough to make up losses through evident mismanagement and lack of proper organisation.

The second Exhibition, which was more of the nature of a local one, took place in 1865, a glass and iron structure having been designed for the purpose. It is in this building that the forthcoming Exhibition is about to take place. Though there was a considerable influx of English and foreign visitors on the occasion of the second Exhibition in Dublin, still it was financially a failure; and a good deal may be attributed in this case also to bad management, lack of foresight, and want of business scrutiny in several of the departments, and also as to the funds.

Both Exhibitions, however, had their useful ends, and gave an impulse to many dormant industries, which have since been successfully, in some instances, developed.

The Exhibition for this year begins under more favourable auspices, and it is hoped will be more successful than the preceding ones. The Messrs. Guinness, of the well-known Dublin brewery firm, are acting as the guarantees, on the condition that the business, control, and management will be left to their direction,—a condition that has been acceded to by the committee of noblemen and gentlemen formed, and others interested in seeing it properly carried out.

Already considerable progress is made in the arrangements, and a large quantity of goods of various kinds has arrived. The building, as we write, is undergoing re-decoration and painting, and the garden attached is being looked to with a view to have it as attractive as possible when the building opens, which it is thought will take place early in June, or perhaps sooner. The Exhibition will be of a permanent character, similar in conduct to that of South Kensington. Loans of articles of an art description have been freely granted by many Irish and English noblemen and gentlemen, as also by public bodies. The several corporations, having been applied to for loans of paintings and other historical works in connexion with their town-halls, have responded to some extent, and others are also willing to comply with guarantees as to the safety of the articles which they severally intrust.

Although the Irish Exhibition will be general

in its features, it will, at the same time, be more especially devoted to the illustrations of the arts, manufactures, and industries of Ireland; and for that end a separate portion of the building, called the Leinster Hall, will be allotted for the national department. To the latter will be annexed the "Loan Collection," comprising the whole circle as far as possible of objects historic, artistic, and *adscripti glebæ*, interesting in various ways to the Celt. A short enumeration will not be amiss of what the sections and classes embrace.

Section A. — Natural products, including minerals and animal products, chemical products, food, raw materials, and the immediate product of their manufacture.

Section B.—Works of art, including (Class 1), sculpture, plastic art, oil and water-colour paintings, &c., pencil, chalk, and crayon drawings, engravings ancient and modern, lithography, and chromo-lithography. Class 2.—Architectural and decorative designs, photography, models, porcelain painting, enamels, stained glass, and mosaics, and miscellaneous works of art.

Section C.—Class 1. Marble, porcelain, and pottery of all kinds. Class 2. Textile fabrics, lace and fancy work. Class 3. Printing, bookbinding, leather work, wood carving, metal work and furniture. Class 4. Scientific inventions, musical and optical instruments, jewelry, carriage work, and manufactures not otherwise specified.

In looking over the several conditions and regulations laid down by the directorate, we might feel disposed to object in some instances if fault-finding were our only desire in recording them. As every possible care is promised to be taken of the exhibits, the promise must be relied upon. No insurance will be effected unless under special arrangements, and in the matter of providing stalls or fittings, glass cases for shows, show-boards, and other appurtenances, their security or appropriateness must be looked to by the exhibitors themselves, the committee reserving the power of objecting, in cases, we suppose, that may seem to outrage natural fitness.'

In the matter of "sales," it is questionable whether the committee or directorate are on the right track. An agency office is to be established in the building to provide means for transmitting orders or negotiating sales, and for other cognate purposes, for which a nominal charge of 5 per cent. will be made on the amount realised by such sales. This is certainly the bazaar principle, and we shall be surprised if the committee will succeed in otherwise preventing open or covert sales, in view of their loose "regulations and restrictions as to exhibits," which say, "No exhibits can be received for a period less than six months, unless by special arrangements to the contrary, and goods will not be allowed to be removed or substituted except by a special permit from the superintendent."

Notwithstanding that two months' notice is to be given by an exhibitor before the removal of any of his goods, the above regulation is a very plastic one, and the special permit may be managed or relaxed, perhaps to cover a multitude of venial sins. The prohibitions as to admission of inflammable goods are unobjectionable. In the former Exhibitions in Dublin, a description of sales was allowed, and "touting," which we trust will not be witnessed in the present. We bear in mind of course that the ensuing Exhibition is intended to be a permanent one, yet we can hardly see that this alters the fact that it ought not to do anything that would detract from its merit, as a *bonâ fide* exposition of art, industries, and manufactures intended to elevate public taste, and encourage native talent to compete worthily with other talent outside the limit of the island.

We may expect to see a good many evidences of ancient skill; museum and cabinet articles; heirlooms in gold, silver, and other material belonging to Ireland of the past; but what we really desire to see is modern and present day evidence of the country's advancement in arts and manufactures. Appealing to the past, as in condonation for the neglect of the present, will not do in these days of sober improvement. If Dublin, Cork, Limerick, Waterford, and Galway cannot show as fair an example in natural products and manufactures as the commercial town of Belfast, they will not deserve a very high commendation.

Belfast took several gold and silver medals at the late distribution of prizes belonging to the Workmen's International Exhibition,—first-class prizes; but we have failed to see that Dublin carried off any. In strict justice, however, to her, it may be said that Dublin sent very few exhibits to London on the occasion.

As architecture has been lately looking up in Ireland, can we hope for anything in the way of a good show of architectural drawings, designs, models, and building appliances? Can the Institute of Irish Architects redeem the credit of their profession in Ireland, singly or conjointly? They ought to be able by this time to have gathered together the nucleus of a creditable museum. Of Irish works in marble, pottery, and porcelain we shall be anxious to see the results. In that ware known as Beleek pottery we are aware that some creditable progress has taken place of late years, as also in domestic marble ornamentation. We are unaware of whether anything has been done in the sister island in the projecting of native terra-cotta, glazed earthenware of an improved description, or encaustic tile manufacture. In the manufacture of the common building brick in Ireland there is vast room for improvement, and with every facility in many districts for brickmaking, the greater part of that article is rotten rubbish. The country has good brick-clay in many localities, and splendid marble-beds; and the county of Dublin alone is a perfect mine of building materials, from the hardest granite to the softest chalk, casting-sand, moulding-sand, building-sand, painting earths, minerals of various kinds, and a variety of other substances used in the arts, industries, and manufactures of other nations; and yet, with all these, the capital of Ireland is half a century behind the age in many ways.

We are scarcely called on to go into detail; yet we feel it is not out of place, in sight almost of a fresh Irish Exhibition, to direct attention to these matters, with a view of leading men who ought to feel interested to consider the strange oversight that has characterised their action for a number of years.

Energy and enterprise are wanted in Ireland, more dependence on self, and less dependence upon others. A permanent Exhibition will or ought to do good, if it is kept from degenerating into a mere show-shop or building for effecting sales. To be successful, it must have the power to promote, foster, and elicit the true artistic and skilled spirit and embodiment of the country. This it can do only by keeping before the eyes of the people the best examples in everything, and, as far as lies in the power of its directorate, urging and encouraging to still further improvements.

ST. PAUL'S THANKSGIVING FUND.

A numerously-attended public meeting has been held in the Mansion House for the purpose of establishing the fund already on foot for the completion of St. Paul's as a thankoffering for the recovery of the Prince of Wales. The Lord Mayor occupied the chair, and was supported by the Earl of Feversham, the Bishop of London, Mr. Beresford Hope, M.P., Mr. Thomas Brassey, M.P., Canon Gregory, Lord R. Cavendish, Lord George Hamilton, M.P., Mr. W. H. Smith, M.P., Mr. Longman, Mr. Talbot, M.P., Mr. Wren Hoskyn, M.P., Archdeacon Bickersteth, the Dean of Westminster, Canon Liddon, and others.

The following resolutions were unanimously passed:—

"That the national thanksgiving for the happy recovery of his Royal Highness the Prince of Wales would be incomplete without some national thank-offering to mark the people's gratitude; and that, in the opinion of this meeting, the most suitable form which such thank-offering could take would be the completion of the cathedral in which that national thanksgiving was offered up to Almighty God."

"That inasmuch as her Majesty the Queen and his Royal Highness the Prince of Wales have, after the example of their predecessors, affixed their signatures to the new subscription-book, with a memorandum of their offerings, those present be invited to follow the Royal example by now signing the subscription-book; and that the book be presented for subscription to other distinguished persons who may not be present on this occasion."

"That inasmuch as the greater part of the original revenues of the dean and chapter of St. Paul's Cathedral have been diverted from their original purpose and applied to the spiritual and ecclesiastical interests of the whole country, and the funds now remaining to St. Paul's suffice only for the maintenance of its fabric and services, the co-operation of the nation be invited to this essentially national work, and that the resolutions passed this day be communicated to the lords lieutenant and chief magistrates of the counties and boroughs of England and Wales, with the view of obtaining the requisite contributions for this object."

A letter from Mr. Wm. Gibbs, of Hyde Park-gardens, was read, promising, if nine others would subscribe a like amount, to give 1,000*l.*, and if 10,000*l.* were so raised, to give another 1,000*l.* upon the same terms.

The Bishop of London, in moving a vote of thanks to the Lord Mayor, said that no one could enter the cathedral without thinking that something should be done to make it more fit for such occasions as that of the Thanksgiving. The architect of St. Paul's had achieved a building in which the human voice could be heard by a larger number of people there assembled than in any other building in the world devoted to ecclesiastical purposes; and now, Sunday after Sunday, were assembled there between 6,000 and 7,000 worshippers, and he believed that the work which was done there was telling most powerfully upon the lower middle classes of London. On that ground alone he urged the importance of carrying out the work they had in hand.

Dean Stanley was not quite correct when, speaking of the propriety of commemorating the thanksgiving by the restoration of St. Paul's, he said,—"St. Paul's had this advantage, that there was not the slightest doubt whatever as to what should be done for it. Ten thousand schemes might be started in reference to other churches, such as that of Westminster Abbey; but what we had to do with St. Paul's was to make it more bright, more splendid, more gorgeous; to put it in the same category as the great basilica of St. Peter."

The fact is, there is the greatest doubt as to what should be done for it, and it is mainly because the public is by no means satisfied that the committee themselves know what should be done with it, that the matter has been allowed to drag on as it has done. Mr. Street's Papistical proposition to set up a high altar with a baldachino under the centre of the dome, has much damaged the scheme.

It is an unsatisfactory circumstance that not a single artist took part in the meeting in the Mansion House. Art is not to be had without artists.

ROUND CHURCHES IN EUROPE.

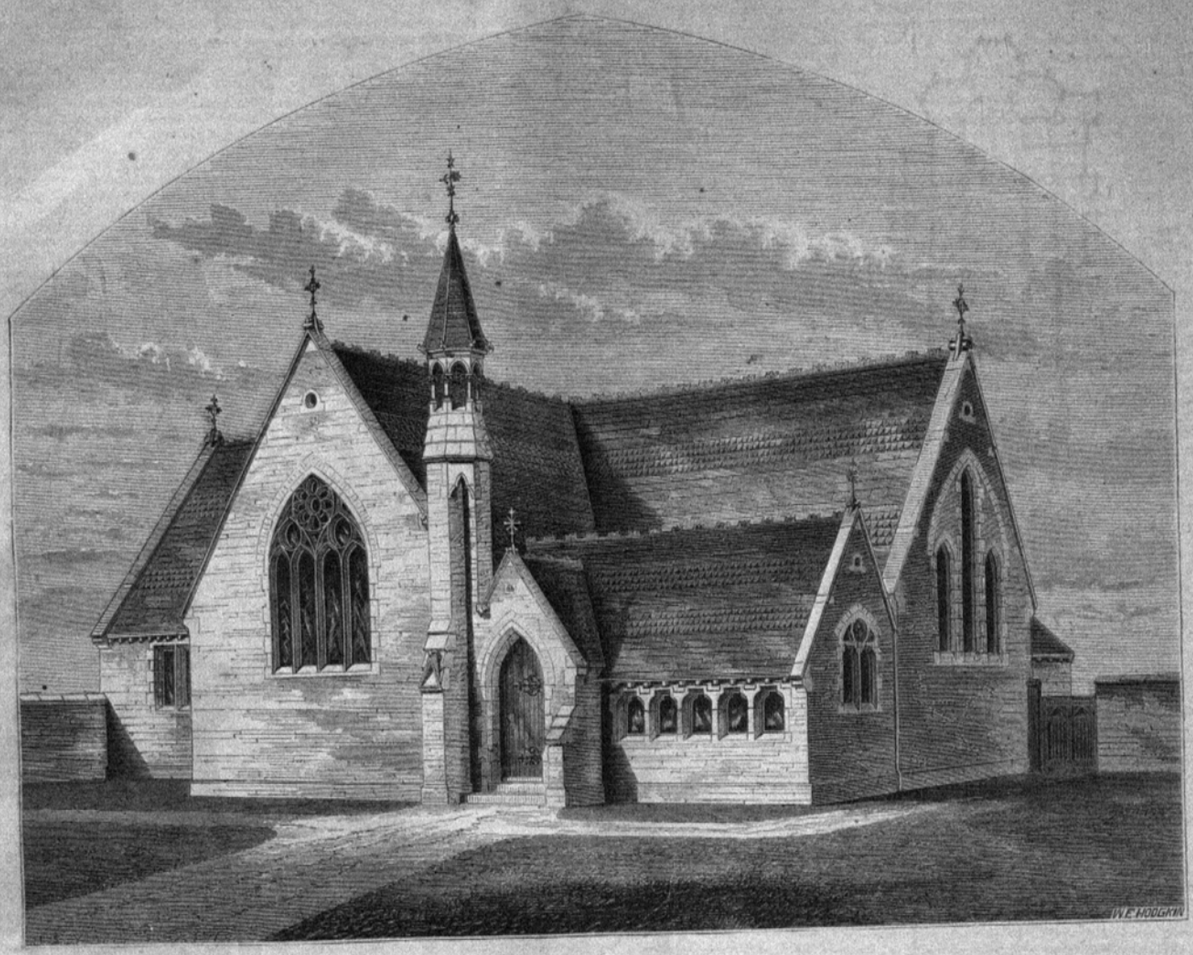
Sir,—M. Lucas, in the essay reviewed in your last number, conveys the inference that the Cathedral of Paderborn is a round church, and was founded by Charlemagne. Allow me to say Paderborn Cathedral is not round, and was not founded by Charlemagne. Possibly the writer has confused Paderborn and Aix La Chapelle.

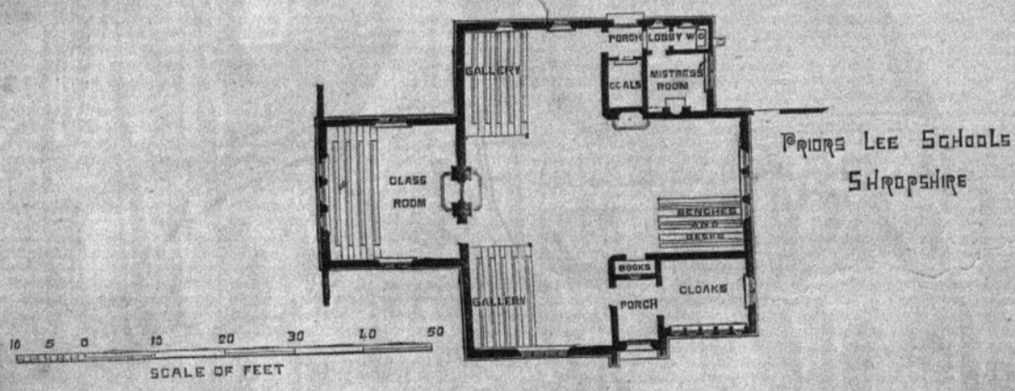
The following are the most remarkable round or polygonal churches in Germany:—Aix La Chapelle (octagon); Fulda; Wurzburg Castle Church; two small round churches at Prague (very early); church in the Wischerad at Prague; "Carleshofer" Church, Prague (octagon, fourteenth century); Oberwittigshausen (octagon); Grunfeldshausen, nave and choir both octagon (thirteenth century, Romanesque); Weilburg; St. Gereon, Cologne (twelve-sided); Kobern (hexagon); and Standorf.

H. W. Brewer.

MARBLE STAIRCASE: GOLDSMITHS' HALL.

The fine hall of the Goldsmith's Company, close behind the General Post-office,—too close behind it,—has recently received a further adornment: the stairs, staircase, and approaches have been re-formed in marble of various kinds, at the cost of something over 8,000*l.*, under the direction of Mr. Robert Hesketh, architect, by Messrs. Burke & Co., of Regent-street, who have done the work well. The steps and landings are of Sicilian marble, one of the landings remarkable for its size; the balusters are of Staffordshire alabaster; the columns which carry the dome are fine monoliths of Griotte de Flandres, each about 16 ft. in height; and the walls are lined with Italian, Belgian, and Devonshire marbles of different hues, elegantly moulded and ably harmonised, including some remarkably beautiful panels of Pavonazzi from the Apennines. A niche on the first landing, whence the stairs go up right and left, and which contains Chantrey's bust of William IV., is cut from a single block of Devonshire marble, weighing originally, we are told, nearly 50 tons. We were surprised to hear that the whole of this successful work had been done in seven months. The Goldsmiths' Company need no longer *dream* that they dwell in marble halls,—it is with them a broad-day reality. By the way, the domical covering is now scarcely good enough for the substructure: it needs mosaic work, and a little high-class painting.





THE GRANVILLE SCHOOLS, PRIOR'S LEE, SHROPSHIRE.——Mr. Joseph Fogerty, Architect.

THE GRANVILLE SCHOOLS, PRIOR'S LEE, SHROPSHIRE.

The schools we illustrate have been recently erected from the designs of Mr. Joseph Fogerty, near Shiffnal, in Shropshire.

The external faces are of red brick, with white stone dressings to windows, tower, and doors. The roof is covered with brown and blue Broseley tiles, in bands. The internal faces of walls are of white glazed brick, with wood skirtings.

The internal woodwork throughout is of selected pitch pine, varnished. The ceiling is plastered, and divided into panels by wood ribs. The porches are tiled, and all the remaining floors are of wood.

The room is heated by large open fireplaces, as shown on the plan. The requisite closets, &c., are erected in the playground for the children.

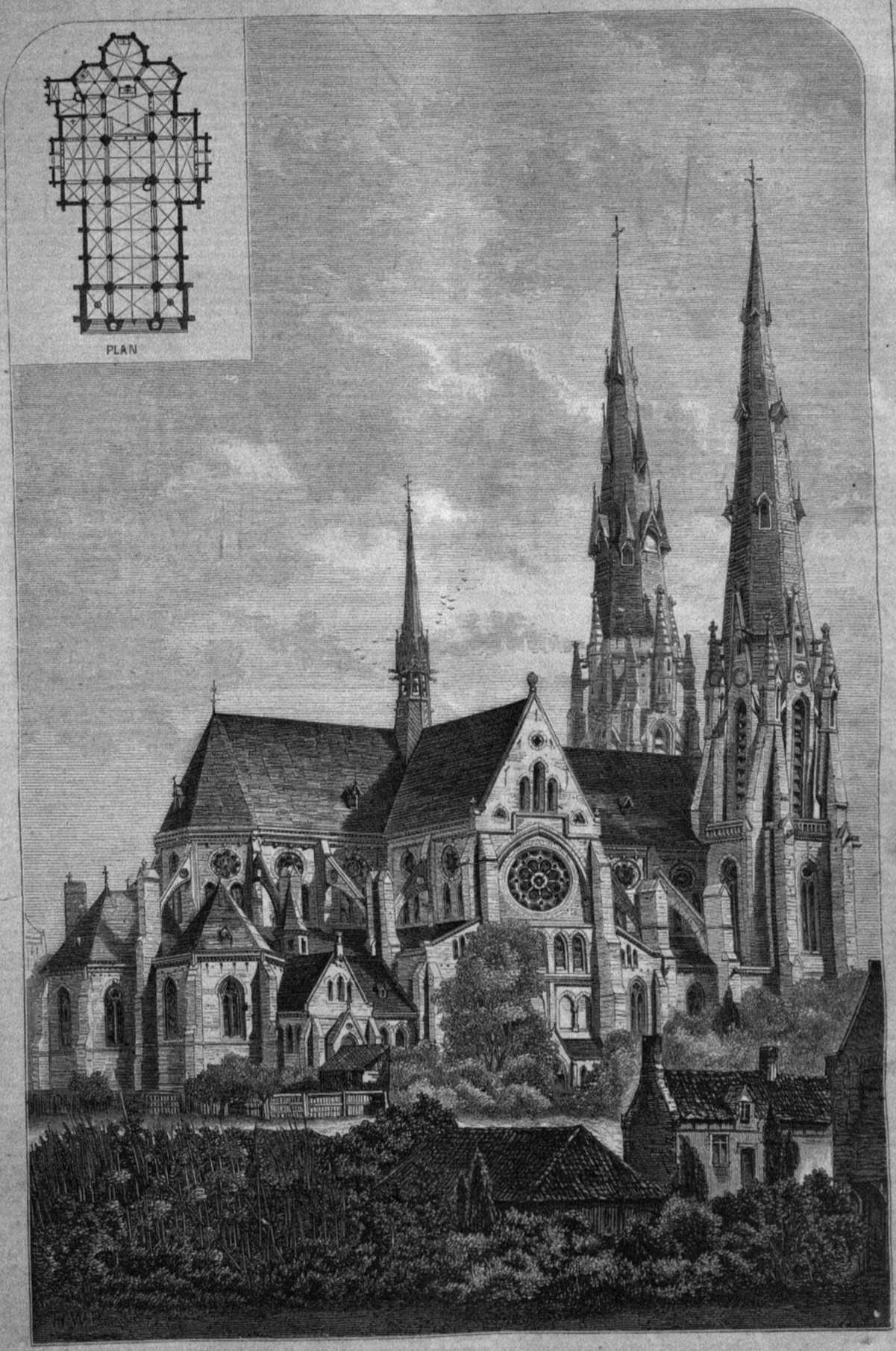
Accommodation is provided for 250 infants; and in the arrangement of the galleries and desks care has been taken to avoid, as far as possible, any confusion when more than one teacher is speaking. The cost was 1,296*l*.

The builder is Mr. J. Cobb, of Newport.

THE PUBLIC HEALTH BILL AND WATER SUPPLY.

In introducing his Public Health Bill, Mr. Stansfeld expressed his conviction that the existing enactments furnished sufficient powers for enabling local health authorities to provide sewerage and water supply for their districts; but with regard to the powers of local authorities to compel the use of wholesome water, the honourable gentleman is certainly in error. The Public Health Act of 1848 enables Local Boards to compel any occupier to lay water on to his house, provided he can do so at a cost not exceeding 2d. per week; but practically this clause has been found to be inoperative, and a further provision appears in the Local Government Act of 1858, enabling Local Boards to enforce the use of wholesome water when the cost of doing so does not exceed the rates authorised by any *Local Act* in the district. Now the term Local Act is so ambiguous as to render the contemplated extension of power almost nugatory; and in districts where water is furnished by a private company, Local Boards have more than once been advised that the Public Health Acts do not confer the powers that they require to secure a supply of pure water for domestic purposes. Will it not be well to have so important a power conveyed in terms that admit of no ambiguity?

A. J.



ST. CATHERINE'S CHURCH, EINDHOVEN, HOLLAND.—MR. CUYPERS, ARCHITECT.

ST. CATHERINE'S CHURCH, EINDHOVEN.

ARCHITECTURE IN HOLLAND.

WE have frequently had occasion in this journal to notice the remarkable "revival" of Gothic architecture which has taken place in the little kingdom of Holland during the last fifteen years, and we have more than once pointed out the fact that it is almost entirely due to one gentleman, Mr. P. J. Cuypers, of Amsterdam and Roermond. We have published illustrations of some of this gentleman's works, including St. Barbara's Church, Breda, and his design for a new museum at Amsterdam. We now give an additional example of his work in our illustration of his Church of St. Catherine at Eindhoven.

The new Church of St. Catherine in Eindhoven is certainly the best example of modern Gothic architecture which we have seen in Holland; it is also one of the most complete and perfect modern churches in that country. In addition to these advantages, it possesses another, that of being erected on a most excellent site.

The pretty little town of Eindhoven consists principally of one long wide street, with high brick gabled houses on either side. At each end of this street is a large square or "place" planted with trees, and paths bisect these at right angles to the principal or High street. Now the Church of St. Catherine is situated at the extreme end of the town, with its west end opening upon one of these large squares. It has a wide street on its southern side, while the east end and north side are surrounded by market-gardens and hop-grounds; and, as the church is upon the only rising ground in the whole town, it is seen to great advantage from all points of view.

It will be seen from our "sketch plan" that the church consists of a choir and aisles, a chevet, with three radiating apsidal chapels to the east, and a sacristy to the north; transepts, with eastern and western aisles; a nave and aisles, and two western towers. The dimensions of the building are as follows:—Total length, 237 ft.; width across transepts, 114 ft.; width of nave and aisles internally, 71½ ft.; width of nave in the clear, 33 ft; height of nave to the brick vaulting, 71½ ft.; height of spires, 244 ft.

The most striking portion of the exterior of this fine church is perhaps the west front. It consists of three deeply-recessed doorways, the centre one of which is double, and has a noble statue of the Madonna and Child, considerably larger than life, upon its centre column, and a tympanum filled with sculpture, representing scenes from the life of St. Catherine. Above this is a large wheel-window, and over this, again, a gable pierced with long lancets, in front of which is an arcaded parapet, with angels standing upon it in front of the gable. The towers which flank this gable are similar as high as the parapet of the clearstory-walls, which is carried round them and returned across the west front. Above this line, however, they are wholly dissimilar. The northern one consists of an elongated lantern, pierced with lancet windows on its four cardinal sides; while long, sloping buttresses and octagonal pinnacles fill in the spaces between the square of the tower and its four oblique sides. The whole is crowned with a lofty spire of slate, pierced by three rows of louvre windows. The southern tower also becomes octagonal above the line of the clear-story parapet, but is quite differently treated from the one we have described; for, instead of having its cardinal sides gabled above the windows, four circular turrets are bracketed out from that front, and are united by an embattled parapet, from within which the spire commences. The spire also differs from its companion inasmuch as four large dormers are inserted into it, for the clock-faces. We need scarcely observe that, in ancient churches it is much more common to find the western towers dissimilar than exactly alike, and this is even the case when both were erected at the same time. The rest of the exterior of this church can be better understood from our illustration than any description. We should mention that the whole building is in brick, with the exception of the doorways, window tracery, and strings. The brick is of a dark brown colour, and is laid in "English bond."

The interior of this church is far richer and more elaborate than the exterior. The whole building is vaulted in brick, with stone ribs and richly-carved bosses. The clearstory windows are shafted and moulded in stone, and below them is a very originally-treated triforium, consisting of three arches in each bay, the upper portions of which are filled with tracery, and the lower portions, as high up as the springing of the arches, are filled in with a conventional representation of curtains similar to those on the west end of Rheims Cathedral. The arches of the main arcade are of brick in bands of colour, but with stone labels; all the capitals are carved in simple and conventional foliage of admirable design. The altars and screen-work, most of which is complete, are of stone, elaborately carved, especially the parcloses of the choir and the high altar, which are excellent examples of church furniture. The metal throne candlesticks and candelabra are all from the designs of Mr. Cuypers, and show that gentleman's thorough knowledge of that branch of his art. The arrangement of the altars in the transepts is one of the most pleasing features of the whole design. The only articles of church furniture which are not from the architect's designs are the pulpit, the font, the confessionals, the altar-rails: these are all Italian, and were the only things saved from the church which stood where the present one now stands. It was a poor barn-like edifice, about 200 years old, and everything that was good for anything about it has been carefully preserved in the new building. The pulpit is a good example of Late Renaissance carving, as are also the confessionals: they are of oak. The font and altar-rails, though bad in design, are of pure white statuary marble. Some people have found fault with Mr. Cuypers for keeping these features in his new church, but we think that he has acted wisely in preserving memorials which were in themselves good of the old building, however out of character they may be with the new one, and really the effect of these is anything but bad. They seem to give an interest to the church.

Before concluding this notice of this remarkable church, we must say a few words of the system of decoration which has here been carried out. The brickwork of the interior is in bands of buff and red, with a few lines of black; the buff, however, is in every case separated from the red by a broad band of whitewash, over which the markings of the brick are all picked out, and arabesques in blue and green painted over the whole. The stonework is also decorated in lines and spots of colour, and a considerable amount of gilding is introduced into the decoration of the roof. Below the aisle windows runs a series of wall pictures, painted in very flat colour, with strongly defined outlines. They are chiefly on a white ground. The reredos of the altars, and the altars themselves, are also decorated in colour; and every window is filled with stained glass, or patterns in "grisaille." Certainly a church with as much colour as is here described would, without great care was taken, appear gaudy; this has, however, been entirely avoided by the introduction of a quantity of pure white, which has a most brilliant effect, and yet seems to bring the whole into harmony and good keeping.

An altar carpet of most elaborate design, consisting of a mystical representation of the Garden of Eden, has been worked for this church. It is from the designs of the architect, and is, with the exception of the altar carpet for the Cathedral of Aix-la-Chapelle, the finest example of modern work of this description that we have seen, on such a large scale.

NEWS FROM ROME AND FLORENCE.

A HURRIED visit to Rome during the last weeks of the Carnival enabled me to take a cursory view of the state of the new capital under its Italian *régime*.

To the lovers of art, and the lovers of Rome as it was in the old Papal days, the change will not be altogether satisfactory. The welcome tranquillity, after visits to the bustling cities of the north of Italy, and the noisy Neapolitan capital, no longer exists. True, the crowd—the mob, I may say—of people this winter in Rome prefer the Corso and the Pincio; the places where, seeing, they can be seen, mostly attract them; luckily for the would-be student and lover of antiquity's remains, who are thus able to see some of Rome's treasures unmolested. But to our minds, in the words of the poetess (whose son, so deeply read in Rome's archæological lore, is now delighting his hearers with his interesting *séances* in Rome), we may sing appropriately, "Rome! Rome! thou art no more, as thou hast been!" On the other hand, to the lover of progress the movement literally speaks volumes. The freedom of speech and action, before so circumscribed, is now unchecked, but sudden and great changes like those in Rome must bring mixed consequences. In time, there is no doubt, the good will predominate. Education and enlightenment are the two great objects now prominently being battled for; but the reformer has to fight his way into Rome with hard, struggling steps. Old institutions,—the profitable begging trade, formerly sanctioned by the municipality,—have to be eradicated, and that at a time when rent and provisions have been raised and taxed to an unwonted degree. Begging produces a tangible supply, while education seems to the poor but the engrossing of the machinery for begging without producing visible returns; but work will soon be supplied in abundance, and the Roman workman should, if able to put forth sufficient energy, profit by it. The unemployed from the late capital are flocking down to be ready to work in the new buildings about to be erected. Count Beretia, the director of public constructions in Italy, has now the plans ready, and the approval of the Government for the commencement of the new grand quarter to be built on the site of the Prætorian Camp, near the Railway Station. Three streets of good large and imposing-looking houses are already planned, one leading from the railway station to the Corso already begun, and nearly a dozen houses being completed.

A handsome railway station is in course of erection, to replace the wooden sheds of many years' standing; the hitherto receptacles of all the accumulative confusion and ill-management to be found wherever railway termini exist.

To reach Rome is one thing,—to leave the station in possession of your luggage is a much more distant accomplishment. The coming of the Italians has produced the yellow washing of the exteriors of the houses in the *principal* streets of Rome, but the parts not in that category appear to be, perhaps from contrast, much more filthy than ever. The streets were indescribably filthy during the Carnival; the rain, mixing with the lime *confetti*, made matters still worse. An attempt at paving the Via Condotti, the street in which the most attractive shops exist,—where copies of the antique and the Roman jewelry are mostly displayed,—signally failed, the pavement being *lower* than the *road*, and, therefore, the receptacle of all the rain and mud from the latter, and the coachmen, unused to the modern innovation, drive over it indiscriminately. But the municipality promises, when the crowd of visitors has passed away, to pave Rome in an efficient manner.

All buildings to be erected are to be *within* the walls; large parcels of ground are to be found on which to raise the necessary buildings.

The *on dit* that the Campagna is to be drained by an English company requires confirmation. For agricultural supplies to the growing capital, it would prove of immense advantage.

Depending from without for all necessary supplies, provisions for the poor and the ill-paid *employés* who have flocked down to the capital have become exorbitant in price; increased by the enormous consumption by the unusual number of visitors to see Rome under its new auspices.

Taxes, increased twenty-fold, are groaned over by artists and artizans there; but after the first *furore* affairs will brighten for them. Enterprising North Italians have taken down their wares, and duplicate shops to those opened when Florence became the capital, and vieing with those of Paris, may now be seen in the Corso.

The excavations of the Roman Forum are progressing most satisfactorily. A question might be mooted as to the legitimacy of Signor Rosa's supplying by brick erections the bases of the pillars in the Forum; the spots where they originally stood cannot be mistaken.

The hours and days of admission to the Vatican are limited, but to the real wisher to see its treasures, the ways and means are easily obtainable.

The prevalence of small-pox continues,—deaths therefrom range from 35 to 55 a week, but are almost entirely confined to the Italians: the visitors are not sufferers from it.

We must not omit to mention, among the projected improvements, the erection of two churches,—one for the English Episcopal congregation, one for the American: Mr. Street is the architect of both. Nothing is to be spared to produce a handsome and appropriate building for the English church. The site is within the walls, and nearly facing the Pincio.

The admission of all sects into Rome, now the capital of a free State, having a free Church,

causes a great demand for places of worship. Perhaps the chapels of the appropriate religious houses may be ceded, as has been done in Florence to the Waldensians.

The one great theme of conversation has been the discussion, permitted by the Pope and in Rome, on the subject whether St. Peter ever visited Rome. The arguments were carried on with great patience on both sides, three learned Roman Catholic divines being heard with three Italian "Evangelisti," or Protestants, in opposition, Deodati's translation of the Bible being used by all by common consent. Leaning only on *tradition*, and the assertion that the name "*Babylon*," used by St. Peter, whence, in his Epistles, he sent salutations, meant *Rome*,—as said an Italian discussionist, "We might have used the expression in reference to Paris during the reign of the Communists,"—on these two arguments the Roman Catholic disputants founded all their answers to the addresses on the opposite side. The weak assumption of the chief of the orators that if St. Peter were but an hour in Rome it was sufficient to constitute him the head of the Roman Church, failed to give any weight to the question. The tale has been taken up, and discussions on the subject are being held all over Italy. The mode of crucifixion, which tradition and history attach to St. Peter's death, was found by Mr. Hemans to be Parthian, not Roman.

Many celebrities of the Roman Catholic Church of the anti-infallibility party are now in Rome. Père Hyacinthe, the famous ex-Carmelite French declaimer against innovations, is there; the great friend of Dollinger, the *head*, as Père Hyacinthe is the *heart* of their cause.

Meanwhile Florence, the ex-capital, has suddenly resumed its provincial character. The old Italian families, whose huge palaces have been dim and closed for years, have opened their gates and let in floods of light and gaiety. Florence's attractions will be always the same,—the art treasures are its great stay,—the Pitti pictures are the city's property.

The natural surroundings are always beautiful; and it will not be the fault of its spirited sindaco, Signor Peruzzi, if Florence do not increase in beauty and attractiveness. The already-commenced improvements are to be terminated; those of which the plans are made, but not commenced, are to be ended; but there is a clause allowing a tether of twenty-five years. But plenty of space has been left void by the removal to Rome for any new comers, and it is to be hoped that the willingness with which, for Italy's welfare, the ex-capital ceded its rights, may meet with the reward of greater prosperity in future years.

THE ROYAL SURREY GARDENS, WALWORTH.

These gardens and grounds are now undergoing extensive alterations and improvements, with the view of being shortly opened to the public, with a varied combination of attractions. The large building, which was formerly used as a music-hall, and which was also for some time the scene of Mr. Spurgeon's preaching previously to the erection of the edifice in Newington, is being converted into a spacious theatre, which is intended to be fitted up and decorated in a remarkable manner. The building will be devoted to dramatic entertainments of a good class, and also to concerts and general musical entertainments, which will be one of the principal attractions of the restored establishment. In addition to the theatrical and musical entertainments, the gardens will include the zoological element, and buildings for an extensive menagerie are now in progress simultaneously with the construction of the theatre. With the view of making this department of the establishment partake as much as possible of an educational and instructive character, the services of an experienced zoologist have been engaged, who is now collecting specimens for the menagerie, and several valuable and rare animals have already been purchased. Another feature of the design is the laying out a portion of the grounds as botanical gardens, which is now going forward under the superintendence of a landscape gardener. The gardens are to be rigidly closed not later than eleven o'clock at night, and one day in each week will be set apart as a reserved day for that class of visitors who may have objections to mixing with a miscellaneous crowd. Messrs. Jarvis & Son are the architects for the new buildings and alterations, Mr. Shepherd being the contractor; and the estimated cost of this portion of the works is 3,400*l*. We understand that the buildings and laying out of the grounds are to be completed so as to admit of the establishment being opened in May. Mr. Strange is the new lessee and proprietor.

COMPETITION DODGES.

We have received several letters, commenting indignantly on some invitations to compete now before the profession, such as the request, in our issue of February 24th, to send designs for two semi-detached villas, to cost 750*l*., and that for designs for the Western Counties Idiot Asylum. The terms are very objectionable in both cases. If architects choose to respond, they deserve what they will get.

ARCHITECTURAL ASSOCIATION.

We reproduce elsewhere some portions of the paper read by Mr. G. A. Audsley, of Liverpool, at the meeting on Friday evening last, the 8th instant, entitled "Notes on Japanese Art." The Saturday afternoon visit on the 2nd, was paid by a body of the members to the church of St. Augustine, Kilburn, the choir and transepts of which are nearly covered in. The nave is to be completed while the portion now in hand is in use, the western arch of the crossing being temporarily walled up. As a large church of somewhat unusual plan, with passage aisles in two stories, vaulted with stone ribs and brick filling in throughout, of red brick externally, with a very sparing use of stone, the building proved in many ways interesting to the students present, and thanks were very heartily voted to Mr. J. L. Pearson, the architect, for the permission and facilities afforded.

CHEAP BUILDING AT PORTSMOUTH.

In the case, Alexander Dickment *v.* William Amlet Whillier (in Portsmouth County Court), claim for 49*l*. 10s., Mr. Burbidge appeared for the plaintiff, and Mr. G. H. King represented the defendant. Both parties are builders, and an agreement was entered into between them for the plaintiff to build three pairs of villas, at the rate of 36*l*. each, the plaintiff to find the labour, and the defendant the materials. After two villas and three-fourths of another pair had been erected by the plaintiff, a dispute occurred between them, the defendant alleging that the houses were not being built in a proper manner. After hearing part of the evidence in the action, the Judge remarked that it was impossible to do absolute justice in those cases. There were no specifications, and having entered into a blind agreement, out of which a dispute necessarily arose, the parties came to the court expecting him to settle it. His Honour also called attention to several receipts given by the defendant, some of which bore no receipt stamp, remarking such conduct was scandalous. The defendant said he should know better in future. After some fighting on both sides, the Judge finally gave judgment for 15*l*. and costs.

What about the happy tenants of such abodes?

SCHOOL BOARDS.

Derby.—At last meeting the minutes of the Building Committee were read, intimating that the plans and specifications for the new schools in Gerard-street had been laid before the committee by Mr. Coulthurst, the architect, and, having been sanctioned by them, had been forwarded to the Education Department for their approval. The minutes were confirmed.

Bolton.—At a meeting of this Board the tender of Mr. G. Martin for adapting the British School (which had been recently transferred) to the requirements of the Board, at an expense of upwards of 500*l*., was accepted. It was resolved to make application to the corporation for offices in the new Town-hall.

Southampton.—At the last meeting Mr. W. C. Westlake said, before the Board proceeded to the election of an architect and surveyor, as there was no fixed salary connected with the office, it struck him it would be better to propose that the appointment be made subject to such terms as may from time to time be made by the Board. The resolution was carried. The clerk then read applications for the office from Messrs. E. T. Howell, A. Burt, W. & J. Jurd, and J. G. Poole. Mr. Westlake proposed the election of Mr. Howell, a gentleman who had acted for the Board upon several occasions already, both satisfactorily and reasonably. He was also connected with the town in various ways. The Rev. R. Mount alluded to Mr. Critchlow, who, he believed, had designed many edifices in the town, and amongst others his schools; but that gentleman's name not being sent in for the appointment, he supported the surveyor proposed by Mr. Westlake. He believed he was well versed in the duties of an architect and surveyor. Mr. W. Hickman said the name of the gentleman whom he intended to nominate was already before the meeting, and Mr. E. T. Howell was then unanimously elected.

THE ROYAL DUBLIN SOCIETY.

This body are making some commendable efforts to change their sphere of action in connexion with their schools of art and science. New buildings, and enlargements of existing ones, are projected. The Lord Lieutenant is interesting himself in the affair, and promises whatever assistance is compatible with his office in the country. The co-operation of other institutions in the carrying out of their views is sought under conditions, and more direct Government aid is required to place the schools of the Royal Dublin Society on a larger and more useful basis.

THE GALLERY OF ILLUSTRATION.

Mrs. German Reed and her little company achieved a genuine success on Wednesday evening last, in the production of an entertainment called "My Aunt's Secret," written by Mr. F. C. Burnand, with very agreeable music by Mr. Jas. L. Molloy. When we say that we regard it as the most complete little piece that has been done in the Gallery of Illustration, our readers will not need much more recommendation. The piece is exceedingly well written and admirably acted by Mrs. Reed, Miss Holland, Mr. Corney Grain, and Mr. Arthur Cecil. The latter gentleman, Mr. Cecil, had already established a reputation as a most accomplished comedian, but in the new piece he shows a power of pathos which could scarcely have been anticipated. His three personations,—the courtly valetudinarian, Sir Marmaduke Pender, Thomas Egerton, and the organ-grinder, Arniati,—viewed together and contrasted, demand for him the highest praise.

THE JEWS' HOUSE, LINCOLN.

We hear with regret that the interesting Norman House at the foot of Steep Hill, Lincoln, is in so bad a state of repair that unless wise measures be adopted to restore the front to the perpendicular, and otherwise strengthen and maintain the fabric, one of the very few examples we have of a street house of the Norman period will become a ruin. This building dates from the beginning of the twelfth century. It appears to have gained its popular name, the Jews' House, from an incident in the reign of Edward I., when a Jewess residing near it was executed for clipping the coin of the realm. The city of Lincoln, for its own sake, should see that this interesting and valuable relic of past time, and tangible evidence in connexion with its early history, is safely preserved.

CONVENTIONALISM.

Sir,—I have been much interested with the articles which recently appeared in your journal on "Conventionalism in Art." May I be allowed to add an illustration not made use of in them, bearing on the subject, and showing how fine the line is which divides the ideal and conventional in artistic treatment from the actual and the vulgar? I refer to the introduction of the representation of the iris and pupil of the eye in sculpture, which is sometimes tried, always, however, resulting in a parallel degradation of the ideality of the work which the introduction of colour occasions, as noticed in your articles. The more ideal the subject and treatment the greater the degradation by those means; and even in portrait sculpture a refined taste will not think that anything is gained, but the reverse. How correct and exquisite the instinct of the ancient Greeks in art matters was is seen in nothing more than in the absence of colour (though this is considered dubious by some), but

certainly in the uniform blankness of the eye, which to a lower taste is deemed a defect. It bears, however, I think a very interesting relation to the subject of "conventionalism," as treated in your pages. NEMO.

PETITIONS TO THE HOUSE OF COMMONS.

SIR,—Would some of your correspondents on the spot kindly enlighten a poor bewildered country coterie of your readers by giving us the following information?—

1. Where do all the petitions go to ultimately which are presented to the House of Commons?
2. Are they pigeon-holed (if so, where?) or stored (if so, how?) or thrown into a cellar under the House? (state whether it be fire-proof?) or are they preserved at all? (if so, in what building?)
3. How many cubic feet of space do they occupy per annum.
4. Are they considered as "national records?"
5. Finally, kindly inform us whether they do not constitute a waste-paper perquisite of the Chancellor of the Exchequer, as some of us think? X. Y. Z.

WHAT MIGHT BE EXPECTED.

AMONG the replies transmitted, through their town clerk, to the council of the borough of Reigate, upon their inviting by advertisement applications for the appointment of an assistant surveyor, to give his whole time at a salhry of 50*l.* per annum, was the following:—

"6, Hodge-alley, New-cut,
8 March, 1872.

Mister, I as fur this many yeres carrid a odd has a bricklayers laberer fur a good master Bilder has wud I nose give me a carakter.

My wages time about cums by wurking overtime and such lik to a bit more in the yere nor you hoffers fur sistent survayor, but I be gettin in yeres and fansis the wurk wud be easier in yure place, so if I sutes wud be glad to take it,

remaining your servant mister,
SAMMEL SMITH.

I rites this has speciment, but my son has as ad sculing rites the dreeshun fur me."

Samuel's caligraphy partook rather more of a *fist* than a *hand*, but he enclosed a testimonial as to his fitness for the post from his employer, Mr. E. Eakins, of Eden-gardens, East Lambeth-road. P.

THE NEW PUBLIC OFFICES AND THE WIDENING OF PARLIAMENT-STREET.

IN the *Builder* of last week is a report of the reply of the Government to Lord Redesdale on the subject of the widening of Parliament-street, the reply being that if such was found to be necessary, the proper persons to pay the expense would be the metropolitan ratepayers. Now, sir, the present Government have of late expressed most extraordinary opinions on such matters (notably in respect to the Thames Embankment), but I think this proposition beats all. You are aware that parallel to Parliament-street formerly ran King-street, one of the oldest streets in the metropolis, and (as its name implies) the king's highway to Westminster. The Government have stopped up this street and taken possession of the soil thereof, whereon they are building the New Public Offices. Having thus thrown the traffic of King-street into Parliament-street, and made the latter dangerous, the Government has the conscience to say that the ratepayers of the metropolis must pay the cost of remedying the inconvenience. I do not believe the Metropolitan Board are quite so soft as the Chancellor of the Exchequer seems to think them. T.

THE TRADES MOVEMENT IN LONDON.

THE Master Builders' Society met last week to consider a memorial from the carpenters and joiners, in support of one previously received from the operative masons, requesting an advance of one penny per hour on wages, and a reduction of the hours of labour to fifty-one per week. After considerable deliberation, the master builders unanimously came to the resolution that the present rate of wages,—viz., 8d. per hour,—was a fair and liberal rate, having regard to other like trades, both in the metropolis and in the country. As regards the hours of labour, they had reports from different quarters that in some places the men wished to work fifty-four hours, the same as the engineers have settled to work. In other places even longer hours are general; and so the society eventually came to the conclusion that the present hours, as proposed by the operatives themselves last October,—viz., fifty-six hours and a half in summer, and fifty hours and a half in winter,—was a fair and not excessive rule. Although some little difference of opinion existed as to the exact number of hours desirable; on the main point,—viz., 8d. per hour,—it was unanimously agreed not to increase the rate; and if the men should strike against any employer for a rise, other employers would close their works.

THE EXHIBITION OAK.

SIR,—Walking in Hyde Park on Saturday, I was sorry to see that the old elm tree, which was so conspicuous in the north transept of the Exhibition of 1851, was prostrate on the green sward, hewn ready for the saw-pit, and marked or lotted as if for sale, or sold. I should have thought that South Kensington would have gladly claimed it as a relic, or at any rate it might have been converted into seats for the children of those who sat twenty years ago under its branches, and refreshed themselves.

A JUROR OF 1851.

THE SEWAGE QUESTION.

The Birmingham Bill.—In the course of the discussion on the Birmingham Sewage Bill in the House of Commons, Mr. Samuelson said that he could speak from personal experience as to the application of sewage to land, for that of Banbury passed within a quarter of a mile of his house, and was no nuisance. Lord Warwick, moreover, was having the sewage of Leamington brought into his park, being convinced that it was no nuisance if properly utilised. The opposition to the Bill was analogous to that offered to railways by landowners, to whom they subsequently proved a great benefit. There was a strong fight over the Bill, the second reading of which was, however, agreed to.

The Fleet.—A suggestion for relieving the Fleet Sewer, which has proved too small in wet weather to carry away the drainage of the district through which it passes, has been made by Mr. Scott, the surveyor of the St. Pancras vestry. He proposes that advantage be taken of the construction of the Euston, St. Pancras, and Charing-cross Railway, for making another sewer to carry off the storm-waters which now periodically overflow into the kitchens of the houses at King's-cross and its vicinity. Mr. Scott's proposition was warmly approved by the vestry, and recommended to the consideration of the Metropolitan Board of Works.

Ventilation of Drains.—A system of ventilating drains is now in operation at Victoria Mills, West Vale, Mr. Stott having patented the system, through Messrs. Tasker & Brierley, Halifax. The plan is simply that of connecting a pipe between the drain and the ashes place of the boiler furnace. The heat of the fire draws the bad air from the pipe, and it is thus consumed, no smell escaping from the pipe, and the drain for a considerable distance is in this way kept free from foul gases.

ACCIDENTS.

Fall of a Corn Mill at Manchester.—The front of a corn-mill, in Back-street, John-street, Manchester, has fallen to the ground. Happily no one was injured, the workmen on the premises having left for dinner shortly before the accident took place.

Fall of a Building at Stockport.—As some workmen were engaged clearing away old storehouses and offices, three stories high, and 60 ft. long by 30 ft. wide, in the Park Mill-yard, Stockport, previously to the erection of some new premises, about one-half of the length suddenly fell outwards, owing to some of the beams becoming untied. Several persons were more or less hurt, and others had narrow escapes. Two of the labourers are not expected to recover.

Fatal Fall of a Scaffold at Shrewsbury.—A shocking accident has occurred to Mr. Deaves, and to two other men who were with him on some scaffolding, at the bottom of Wyle-cop. Mr. Deaves, it appears, purchased, some months ago, a house in the locality named, and the building has since been pulled down and rebuilt. A man named George Heath, who had a youth working with him, was engaged in putting up some troughing at the back of the house, and Mr. Deaves ascended the ladder to see how the work was progressing. While the three were standing on a plank, the "putlog" on which it was standing gave way, and they were precipitated a distance of from 35 ft. to 40 ft. Mr. Deaves, in falling, is supposed to have caught his foot in the ladder, but he came to the ground with a terrible crash, the young man falling upon him, while Heath fell upon his feet. Mr. Deaves has since died, and the others are seriously injured.

CONCRETE HOUSES.

SIR,—The conduct of your correspondent, Mr. G. P. Edwards, cannot be too highly praised in so kindly allowing your readers to inspect the house now building at Addlestone. It has three reception-rooms, kitchen, offices, &c., on ground-floor, about six bedrooms on the first-floor, with an attic story in the roof. There is also a cellar.

The walls, of concrete, have hoop-iron bond at intervals, and are covered with rough cast, with cement dressings to the angles, windows, copings, chimneys, &c.

I was much disappointed to find a quantity of brickwork in various parts of the house, and on the question of cost, if 2,000*l.* be correct, and the price or hire of apparatus added, he might just as well have used bricks and mortar, unless the joiner's work and fittings are to be very costly.

A concrete house costing from 600*l.* to 800*l.* and letting for about 50*l.* per annum, would not only pay well, but be a great acquisition to middle-class dwellings, from the accommodation being greater than is now obtained at the same price in bricks and mortar.

It would be interesting to hear of any now erecting.

BUSY BEE.

VARNISH.

SIR,—Will one of your readers oblige with a recipe for varnishing a small article, made of beech? When varnished, I wish it to have a *glossy* and *shining* appearance.

R. M.

THE ROYAL ENGINEERS.

SIR,—Your correspondent, "Suum Cuique," makes the assertion that there are "causes which are diverting the attention and undermining the efficiency of our engineers—both officers and men."

As neither officers nor men can defend themselves from this attack in your columns, permit me to assure your numerous readers, as the result of some five weeks' close observation of both officers and men, during the last summer at *Chatham*, that the Royal Engineers are in no sense of the word "*inefficient*."

I am not acquainted with the state of efficiency of the other branches of her Majesty's service; but, if those branches are in the same state of discipline, training, and *efficiency* as the Royal Engineers, the country is in possession of an army that is fit for any duty to which it may be called, though the enemy stood at our gates to-morrow.

FRAXINUS.

PROVINCIAL.

Workington.—The Carlisle City and Branch Bank is just about completed at Workington. An effect is produced in the north-east front by simply setting back the wall on the one-pair floor, thus forming a natural balcony, which forms a little tile-paved conservatory, outside the manager's drawing-room, should he see fit to utilise it in this manner. There is a limited amount of enrichment. The principal office walls will be lined to a height of 4 ft. with moulded panelling. The manager's house is amalgamated with and forms part of the bank building. The architect is Mr. John Hodgson, of Carlisle; and the contractors are, Messrs. James Wilkinson, builder and slater; Robert Harrison, carpenter and joiner; J. Ashbridge, plumber; Lees & Graham, iron-founders; Robert Ormerod, cementer and plasterer; and David Canning, painter and glazier.

Bradford.—A new infirmary for the accommodation of male patients of the Bradford Workhouse, has been erected, at a total cost of about 4,000*l.* (exclusive of furnishings), and formally opened.

Books Received.

Laxton's Builder's Price-Book for 1872. Kelly & Co. London.

Atchley's Civil Engineer's and Contractor's Estimate and Price-Book. Lockwood & Co. London.

LAXTON'S now old-established Price-Book increases in bulk, and we may add in usefulness. Like all similar works, it requires to be used with intelligence, but evident pains have been taken to make it accord with recent changes in the labour market. The present edition includes the Building Act, the Bye-laws of the Board of Works, a list of distinguishing Brands on deals and boards, and much other information.

The Civil Engineer's and Contractors' Price-Book is edited by Mr. W. D. Haskoll, and includes some forms of specifications, and a priced list of plant and tools. The editor properly remarks, that the varying cost of labour under

different circumstances, and in different places, "becomes of primary importance, and requires to be very closely examined into before it is possible to shape a reliable estimate."

Estimates and Diagrams of Railway Bridges. By J. W. GROVER, C.E. Second Edition, enlarged. London: Spon.

THESE estimates and diagrams include railway bridges for turnpike, public, and occupation roads in the embankments of double and single lines and cuttings of double lines, with form for calculating quantities in skew structures, &c.; also culverts of various dimensions. The author, in this edition of a strictly professional and reliable work, has added some good examples of station works, as actually executed, with their costs, which will be found useful.

VARIORUM.

"EXAMPLES of Architectural Ornaments of Papier Mâché manufactured by the Papier Mâché Company," Part III., shows very attractively the ceiling-flowers and ventilators which they have on sale. The representations are got up in somewhat novel style. —— The *Illustrated Book of Poultry* gives a hint as to economy in poultry-houses:—"In erecting any range of buildings for poultry, it will save much, both in time and money, if *all* the details are so planned as to cut up the standard lengths of timber without waste. The most usual length is 12 ft., but 16 ft. is not uncommon, and occasionally 24 ft. may be had in quartering (2 in. by 3 in.) or scantling (4 in. by 3 in.). The latter will be the proper size for the main uprights, while quartering will do well for door-posts, and to support the partitions. But as short wood is generally cheaper than full lengths, if the width of a shed be 6 ft. for instance, it will save both money and the labour of sawing if all the boards for the cross partitions be ordered from the yard in 6 ft. lengths, when they are ready for nailing on without any preparation or loss of time. If the width of shed be 8 ft., a board will still cut without waste, as the tonguing will keep two 4 ft. lengths in place before the long ones. Much money is often literally thrown away for want of considering these simple matters."——The *Quiver* has a chapter on underground work. The writer says,—"The work going on day and night in our 3,000 British coal-mines is difficult to realise. We hear not the sound of the 10,000 picks, borers, and sledges; we see not the subterranean towns where the grimy pitmen are manufacturing wealth and power for the British empire. But we may note some of the results directly following from the labours of these coal-black workers. The myriad spindles of our cotton-factories, the blazing furnaces of the iron districts, the ceaseless work of steam-engines, in towns, villages, and homesteads, and the fleets of steamships crowding the ocean highways, are all dependent on the mines, from which are drawn, day and night, the elements of an empire's strength. Such considerations may tend to quicken our sympathies for every class of these underground workers." —— The *Art Journal*, treating of "Art-work for Women," says,—"Hitherto, the most favourite branches of design for ladies have been *lace, fans*, and *jewelry*. If they could not decorate their dwellings, they might, at least, ornament themselves. But the same kind of talent might find a yet wider scope in the recent revival of the ancient homage to St. Valentine, and in the interchange of the Christmas and New Year's cards, which now make the postman's 'Christmas-box' a double pleasure as well as duty. The coloured lithographic 'scraps,' birds, fruit and flowers, pretty heads, &c.,—used in the ornamentation of screens and fancy boxes, are also in the same class. The original design is bought by the lithographer, who then reproduces it by the thousand. But such designs are usually made by men: we hear of women employed in the manufacture of these things, but not in originating them. In the manufactory of Mr. Robert Canton, Aldersgate-street, for instance, a very pleasant sight may be seen of rooms filled with happy-looking young women, chatting and singing over their work, as with skilful fingers they put together the delicate flowers, and pretty or quaint devices, which are to bring delight to expectant eyes on February 14th. Mr. Canton is not only willing, but even desirous to give the preference to designs sent by women. But as yet he finds few applicants who can meet his wish."——Dr. Braithwaite, in *Hardwicke's Science Gossip*, affords some interesting particulars of "Manna of the Desert," *Lichen esculentus*. It occurs thickly among stones in the very driest limestone hills of the Tartarian desert, and is scarcely distinguishable from small stones, except by the expert. Mr. Berkeley tells us that Dr. Arthaud published a pamphlet to prove that this must have been the manna with which the Israelites were fed. Mr. Munby, who resided many years in Algeria, says that it covers the sand in some parts, and grows during the night like mushrooms, and also that the French soldiers during an expedition south of Constantine, subsisted on it for some days, cooking it in various ways, and making it into bread. "Presuming that the lichen is the same as that on which the children of Israel were fed, there is really little inconsistent with the Scriptural account; allowing that the manna was miraculously supplied, it might still be brought about by natural agency, for Mr. Berkeley further mentions that, lying loose on the ground, without any attachment, it is easily rolled along by the wind, and sometimes piled together in strata several inches in thickness. Nay, more, it is still, occasionally, rained from heaven, being carried up by whirlwinds, and after traversing the air for many miles, falls precisely as the showers of fish, frogs, and gnats' larvæ, which afford sensational paragraphs for our own newspapers. Such a shower of these lichens fell about twenty years ago at Erzeroum, during a time of great scarcity: this bread from heaven affording opportune relief to the inhabitants."——The March number of the *People's Magazine* furnishes, with several interesting papers, some account of the Granite Works of the Ancients. The writer, speaking of Indian work, says,—

"Compared with the monolith temples of granite at Mahabalipuram, which is likewise situated on the Coromandel coast, those in Egypt sink into insignificance. The rocks thereabout are composed of a hard grey granite, containing quartz, mica, and felspar, with a few crystals of hornblende interspersed. Many have been hollowed out by art, and sculptured into temples with spirited bas-reliefs,—representing episodes in Hindu history and mythology,—and supported by graceful columns; all carved from the solid rock. Detached masses have been cut into shapes of elephants, tigers, lions, bulls, cats, monkeys, and various nondescript monsters, and colossal statues of gods, one of which, namely that of Ganesa, being 30 ft. high. The southernmost of the temples is about 40 ft. in height, 27 ft. in breadth, and nearly the same in length; the exterior being covered with elaborate sculptures. The adjoining edifice is about 40 ft. in length, and in breadth, 25 ft. It is rent by natural causes from summit to base. According to the local Brahminical tradition, these wonderful sculptures were executed by 4,000 workmen, who had come from the north, and returned before their completion. From a careful examination, it is evident that almost all the enormous mass of sculpture and carving that adorns this city of monolith temples and colossi, must have been performed without the aid of fire,—with the hammer, chisel, lever, and wedge alone: and this is one of the hardest rocks in the world!"

Mention is made of festoons of granite chains in the interior of one of the principal structures, and in length about 548 ft. Each garland, consisting of twenty links, is made of *one piece of granite, 60 ft. long*. The links themselves are monstrous rings, 32 in. in circumference, and polished as smooth as glass.——The *Gardener's Magazine*, reviewing the City churchyards, speaks thus of that of the Metropolitan Cathedral:—

"The next open space I meet with is the churchyard of St. Paul's, and it pains me to say it is one of the very worst in the city. A more disgraceful scene I cannot imagine than that presented by what is called 'God's Acre' attached to the metropolitan cathedral. Some three or four years ago an avenue of poplars was planted on the northern side of the cathedral. The trees were set 5 ft. apart, so that if they should thrive, they would soon form a thicket. But happily they did not thrive: some have lost their leaders and have been cut back, others are complete and are consumptive. I leave it to the architects to say what would be the effect of a nice thriving avenue of Lombardy poplars on the north side of the cathedral, and conjecture in advance their dictum, 'hideous.' As for the rest of the gardening here, it is too bad for respectable criticism, and I must say nothing because I dare not speak my whole mind plainly. I will simply ask every good citizen to pause for one moment at the point where the cabs congregate opposite the Cathedral Coffee-house, and therefrom survey the scene. Happily there are a few good trees on the ground to save it from complete disgrace, but the 'gardening' that has been attempted is not only a disgrace to the ecclesiastical authorities, but to the City of London."

Miscellanea.

Protection of the City from Fire.—A proposal, having for its object the better protection of the City from fire, was discussed at the last meeting of the Court of Common Council. It was brought forward by Mr. Isaacs, whose idea is to erect large reservoirs, to be supplied with water from the Thames, at such an elevation that it may be available by means of hydrants, without waiting for the arrival of the fire-engines. The cost, according to Mr. Isaacs, would be 100,000*l.*, and the proposal was negatived.

The Infringement of a Registered Design.—An inquiry has taken place before the Stipendiary, at the Wolverhampton Police Court, into a charge against Messrs. Stokes & Hackett, ironfounders, Hall Green, near Bilston, of infringing a design for stove-grates of Mr. William Rice, iron merchant, of Birmingham. The complainant, Mr. Rice, being under an apprehension that the defendants were applying his identical pattern of stove-grates to their manufactures, for the purposes of sale, Mr. Rice had instigated the firm of Rigby & Co., of Birmingham, to purchase half a dozen grates from the defendants. For the prosecution, it was maintained that the grates thus supplied were *fac similes* of the ornamental design in question. For the defence, a moulder, who for twenty years had been employed by the defendants, testified that neither the grates nor the registered ornamental portion of them had been made at the works of Messrs. Stokes & Hackett during the time he had been in their employ. The firm only manufactured plain grates, and purchased all the ornamental ones that they sold. Corroborative evidence was given. Mr. Mallard Ingram, ironmonger, of Wolverhampton, swore that about twelve months ago he sold to the defendants the four ornamental grates, which he had purchased from Messrs. Barwell. A correspondence between the defendants and Messrs. Rigby, relating to the order for the grates, was then handed in. In one of these communications the defendants wrote that, in consequence of a breakage in their machinery they were not able to complete the order in the specified time. The Stipendiary decided that this was an admission of machinery being applied in the manufacture of these grates, and thereupon found the defendants guilty of the infringement: mitigated penalty, 5*l.* and costs in one case: other charges were withdrawn.

Funeral of Mrs. Gilbert Scott.—Mrs. Scott, the wife of Mr. George Gilbert Scott, R.A., died (as we heard with great regret) at Mr. Scott's country seat, Rook's-nest, Godstone Tandridge, Surrey, on the 24th ult., after a short illness, but after suffering from an affection of the heart for several years. The funeral took place at Tandridge (within which parish Rook's-nest House stands) on Thursday, the 29th ult. The procession consisted of a hearse drawn by four horses; three mourning-coaches, each drawn by two horses; and several private carriages. The mourners were Mr. George Gilbert Scott and Rev. John Oldrid, Mr. Gilbert Scott and Mr. Alwynne Scott, Mr. and Mrs. John Scott, Mr. Dukinfield Scott, Rev. T. Scott, Rev. Canon Scott, Rev. William Scott, Rev. T. Scott, jun., Mr. Henry Scott, Rev. — Stevens, Rev. G. T. Hoare; the servants of the household, gardeners, ten clerks, &c., from Mr. Scott's office. The service was performed by the vicar, the Rev. R. H. Borradaile. The outer coffin was covered with violet velvet, and had gilt furniture. The handles were crosses with circles; on the top was an illuminated brass plate. The brick grave was lined with enamelled encaustic tiles. At the bottom of the grave was a Latin cross of coloured tiles, with black border on red ground. The sides and ends were covered with tiles of various patterns. The deceased lady was the youngest daughter of the late Mr. John Oldrid, of Boston, Lincolnshire.

Buildings in St. James's Park.—Mr. W. H. Smith having asked the First Commissioner of Works if it was the intention of her Majesty's Government to proceed with a Bill for which plans had been deposited, under which it was proposed to obtain powers to take a plot of ground in St. James's Park upwards of 350 ft. in length and from 50 ft. to 70 ft. in depth, for the erection of additional offices for the Admiralty, Mr. Ayrton replied that the Bill was in course of preparation, and he hoped it would be introduced before Easter. It ought, he said, to be remembered that the land belonged to the Crown, and the Crown had the undoubted right to build upon it, if such buildings were for improving the carrying on of the business of the country. The real object of the Bill, however, was to acquire some land that belonged to private persons.

West Somerton, Norfolk.—Plans and estimates for the complete restoration of St. Mary's Church have been prepared. Some fine wall paintings have been discovered on the walls of this church, which should be carefully preserved. There is also a Perpendicular screen.

Society for the Encouragement of Fine Arts.—A lecture on "The Drama" has been delivered by Sir Charles H. Young, at the rooms of this Society, in Conduit-street, before a numerous audience, the chair being occupied by Mr. W. Bodham Donne, the examiner of Stage Plays. After referring to the magnitude of the subject he had undertaken, Sir Charles said that he must not be considered as coming before the audience as a theatrical critic, his experience of the stage being chiefly derived from a spectator's point of view. He considered that of all diversions that of the theatre was the most entertaining, and that in the drama we see the high art of the poet concentrating the various incidents of human life into a narrow space, and thus affording to observers a kind of retrospective view of life. But the drama should afford something more than a mere pastime to thinking men. The lecturer was in favour of a subsidy from Government in aid of the true interests of the drama, and he was confident that if a sum of money voted by Parliament were properly expended, the beneficial effect would be felt far and wide. Mr. Donne expressed his opinion that, until the stage was put upon its proper level as one of the great and fine arts, no real improvement could be expected in the drama.

The Proposed Metropolitan Improvements.—At the last meeting of the Metropolitan Board, a report was presented by the engineer (Mr. Bazalgette) in answer to the report of Mr. Haywood, on this subject. As to the new line from Oxford-street through Old-street to Shoreditch and Bethnal-green, Mr. Bazalgette says:—"Opponents have sought to separate and review them as distinct local improvements, treating each portion upon its own local merits only in order to lower their value and importance, to divert attention from their real object, and reduce the whole from one large metropolitan to several small detached local improvements." The Board, he remarks, in this chief improvement has used up several existing lines of wide streets to complete the intended lines of communication, and so at a small expenditure convert them from their present undeveloped condition into arterial lines of thoroughfare. The report then goes ably into the subject *seriatim*. A copy of the report was ordered to be sent to the City Commissioners of Sewers, and other Boards and Vestries represented at the Metropolitan Board.

Bagshaw Hall, Tideswell, Sheffield.—The chief stone of this hall has been laid. The edifice, now in course of erection, is the gift of one of the oldest inhabitants, Mr. John Bagshaw, from whom it takes its name, to Tideswell Old Sick Club. It is intended to be used by this society, of which Mr. Bagshaw has for many years been a member, for the transaction of their business: it will also be let for public meetings. The site is in the Market-square, opposite to Mr. Bagshaw's house, and is the gift of the Duke of Devonshire. The building, which is to be of white stone, will be of the Elizabethan style of architecture, and will measure 78 ft. by 34 ft., with an elevation of 32 ft. This space will be divided into three rooms adapted for the purposes of committee or other small meetings, and a good-sized hall in which magisterial or other public meetings may be held. At the rear of these a small cottage is to be provided for the hall-keeper. The architect is Mr. Samuel Howard, jun., of Stockport, and Mr. Bullock, of Tideswell, is the clerk of the works. The total cost of the building is estimated at 2,000*l*.

Jersey Harbour Extension Works.—It was proposed, at the sitting of the Jersey States, to set aside its Act of March 31, 1871, ordering the construction of a landing-stage and breakwater, at a cost of 250,000*l*., on the ground that the island's exchequer could not afford the outlay; and a motion, embodying those facts, was submitted, providing for the erection of three landing-stages, one in each of the three principal ports of Jersey. After a long debate, the motion was rejected by an overwhelming majority. Later in the sitting, it was unanimously decided to vote 3,000*l*., in addition to a grant of 4,000*l*. already made, for the construction of a harbour, 350 ft. in length, at Bonne Nuit Bay, on the northern coasts.

Freethorpe, Norfolk.—A number of almshouses in the Tudor style have recently been erected here for Mr. R. H. V. Walpole, lord of the manor of Freethorpe; Mr. J. T. Bottle, architect. The cost has been about 1,000*l*.

Health of Liverpool.—The official report by Dr. Trench for last year has been circulated in a printed form. The death rate of the parish was equal to 39·0, and that of the out-townships to 31·4 per 1,000 of the population. The average age at death of the inhabitants of the borough was 22 years; in the parish, 24 years; and in the out-township, 20 years. The average age was lowest in July, August, and September, when infantile diarrhœa was rife. The deaths of infants below five years old for the year, was 8,348, or 48·0 of the whole deaths. The death rates in the districts and wards, ranged from 23·4 in Everton and Kirkdale, and 27·2 in West Derby, to 41·0 in St. Paul's and Exchange, and 43·2 in Vauxhall. The mortuary chapel for Roman Catholics in Collingwood-street has at length been completed, and that curious remnant of a superstitious custom, the "waking" of the dead, it is to be hoped, will soon be put an end to.

The Marylebone Water Supply.—A report by the local medical officer of health on the quality of the water supplied to the parish by the West Middlesex Water Company, has been circulated in a printed form, in order to allay the uneasiness excited by what has been recently stated as to the water supply of Lambeth. Dr. Whitmore has examined the source of supply to Marylebone, the three reservoirs at Barnes, the process of filtration, and the water itself; and he says,—"I can have no hesitation in expressing my opinion that the directors of this company have availed themselves of the best practical means known to science, for delivering their water to the consumer in the best possible condition; that such water is excellent in quality and perfectly wholesome; and that so long as its present state of purity is maintained, it may be drunk, even during the prevalence of an epidemic of cholera, with the most perfect safety."

Black Beetles.—A correspondent complains of that never-ending pest the black beetles; that they exist in a new house of his in battalions, or rather in legions, invade his sitting-room, and attack his book-bindings. He has tried all sorts of traps and baits in vain. We cannot recollect all the "cures" suggested in the *Builder*, but of one or two, of which we have had a little personal experience, we have a grateful remembrance. Phosphoric paste, if spread upon very thin slices of bread, and carefully overtopped and covered by dripping or butter, will kill hosts of them; and many traps, made with bowls or jelly-dishes and sloping pieces of firewood, up which they follow their noses to get at a mixture of treacle and beer, for they seem not only to be sweet-toothed but tipplers, will do for them by hosts at a time. The phosphoric paste should be kept or put out of the way of children, cats, and dogs: mice or rats may share it with the beetles.

American Institute of Architects.—The first course of lectures for the winter of 1871-2, given under the auspices of the New York Chapter of the American Institute of Architects has closed, and the second course commenced on the first Monday in February. The course so far has comprised weekly lectures by Mr. R. G. Hatfield on "Constructive Architecture," and by Mr. Russell Sturgis, jun., on its "Æsthetics." Also a series on "Hospitals," by Mr. Carl Pfeiffer, and another series by the secretary, Mr. A. J. Bloor, on "Landscape Architecture." Mr. Bloor has also lectured on "Common Sense in Future American Architecture." Mr. L. W. Robinson has held, during the course, for the benefit of the junior members, a weekly class in mathematics, as preparatory to the lecture on "Construction."

Public Offices, Reading.—The town council have finally resolved to adopt Mr. Waterhouse's revised plans in pencil of the proposed buildings for public offices, comprising a new council chamber and other improvements of the town-hall buildings, which he estimated could be carried out at a cost not exceeding 7,000*l*.; that Mr. Waterhouse be requested to finish the plans submitted, and to prepare a perspective view of the exterior, with an explanatory report and estimate, in order that the same may be submitted to the council for consideration. Mr. Parry, the borough surveyor, has also been instructed to prepare a ground-plan of the vacant site adjoining the town-hall buildings, and to show thereon the line of the proposed new street, as delineated in the plan attached to the agreement between the Board and Mr. John Henry Blagrave.

Sanitary Legislation in Ireland.—Mr. Neilson Hancock, in his returns, just issued, with reference to local taxation in Ireland, says,—"In sanitary legislation, Ireland had been allowed to fall behind the favourable position of almost complete assimilation, secured by fourteen clauses of the Sanitary Act, 1866, extending nearly the whole sanitary law of England to Ireland. The defect noticed in the last introductory report of the statutes since 1866 not having been extended to Ireland has been remedied by the Local Government (Ireland) Act, 1871, and assimilation has again been secured. The risk, however, of Ireland being again left behind in sanitary legislation is shown by the entire omission of Ireland from the Bill introduced by Sir Charles Adderley, to carry out the codification of sanitary law recommended by the Sanitary Commission."

Chicago Post Office and Custom House.—The *Chicago Builders' Journal* says,—The plans for our new Government buildings are nearly completed. The edifice will have a frontage on both Clark and Dearborn streets of 336 ft. On Adams as well as Jackson street the frontage will be 210 ft. The style of architecture will be of the Romanesque-Inigo-Jonesian order, which is peculiarly Mullettonian. The adoption of this order of architecture by the treasury architect, Mr. Mullett, will give to Chicago an architectural display rarely seen except in London, where Inigo Jones was regarded in his time, which was in the sixteenth century, as the greatest architect of his day.

An Historical Building.—The *Edinburgh Courant* states that a considerable part of the more ancient portion of Invercauld House is at present in course of being pulled down in order to make room for the erection of a new wing. The plan of the projected extension is intended to be in better harmony with the other architectural features of the mansion than the old portions in course of demolition. Among these are the apartments which were occupied by the Earl of Mar, and from which he issued his famous letters in 1715, relative to the Jacobite rebellion, a few days prior to the unfurling of the royal standard at Castleton of Braemar.

Application to Build between the Victoria Embankment and Cannon-row.—At a recent meeting of the Metropolitan Board of Works, a report was presented from the Works and General Purposes Committee, stating, with reference to the letter from the Statistical Society of London, inquiring whether the Board will lease to them the plot of ground lying between the Victoria Embankment and Cannon-row for the erection of a building thereon, for the purposes of the society, that, in the opinion of the committee, it is not desirable to let the ground in question at the present time, and recommending that the society be so informed. The report was unanimously adopted.

The Proposed Wet Dock at Whitehaven. At a meeting of the Whitehaven town and harbour trustees, the secretary read a letter from Mr. Phillips, who submitted a revised tender at 76,997*l*. 16*s*. 9*d*., in the place of his original one at 75,869*l*. Mr. Brunlees, C.E., the consulting engineer to the Board, wrote an explanatory letter that Mr. Phillips had added about 2*l*. a ton to the price of ironwork, which Mr. Brunlees considered fair and reasonable, seeing that the price has risen considerably since the tenders were sent in. After some discussion the secretary was instructed to write to Mr. Phillips and inform him that his amended tender could not be entertained.

Re-building of Warwick Castle.—The rebuilding of that portion of the castle which was destroyed by fire in December last is about to be commenced. Within the past few days workmen have been engaged in erecting scaffolding around the walls at the east wing. As a consequence the public are no longer admitted by order to see the ruins. The work has been undertaken by Mr. Bromage, builder, of Rugby, under the supervision of Mr. Salvin, Lord Warwick's London architect.

Collective Assurance against Injury from Personal Accidents.—A novel feature in assurance is presented by the "Royale Belge" Life and Accident Assurance Company, who have established an English branch for the assurance *en masse* of the *employés* of railway companies and other large industrial establishments against accident to life and limb, as practised in Belgium. The terms seem worth looking into.

Remains of Lake Dwellings.—On the borders of Lake Leman, almost opposite Nyon, there has recently been discovered a lacustrine station, which appears to be very rich in curiosities of the pre-historic times. This station is situated in the gulf of Condrée, near Thonon; the piles cover a considerable space, and the importance of this lake settlement seems to have equalled that of Morges, which faces it on the Vaudois shore. In the course of one morning's investigation there have been collected seven hatchets, two knives, two sickles, one lance, five bracelets, and a large number of pins, all in bronze.

Model Lodging-house, Bradford.—A new model lodging-house has been erected near St. Thomas's Church, Bradford. It is for the accommodation of male lodgers only, and will provide 184 beds, 110 of which are for lodgers paying 4d. per night, and the remainder for those who pay 6d. Reading and sitting rooms are provided, and there will be a small library of standard works. At each end of the building are lavatories and bath-rooms, where hot and cold water can be obtained.

Royal Albert Hall, Kensington Gore.—A series of People's Subscription Concerts is to be given, in order to enable all classes to enjoy music in the Royal Albert Hall. There will be twelve concerts on Tuesday evenings, beginning on the 12th, just past. The prices are, to the picture-gallery, for twelve concerts, 1s., or to a single concert, 3d.; to the orchestra, 2s. for twelve, or 6d. for one; to the balcony seats, 3s. for twelve, or 9d. for one; and so on.

St. Andries.—On Saturday, the 24th ult., the workmen employed at St. Andries in enlarging the mansion for Sir A. Acland Rood, bart., sat down to a supper at Mossman's West Somerset Hotel, in Watchet, provided for them at the expense of Mr. Davis, of Taunton, the contractor for the works. Many pleasant things were said with reference to master and men.

An Engineer Knight.—Her Majesty has been pleased to signify her intention of conferring the honour of knighthood upon Mr. John Coode, C.E., in recognition of his professional services rendered to the Government, and extending over a period of about twenty-five years, during the construction of the national harbour at Portland, which has recently been completed.

Framlingham.—A new bank is about to be erected at Framlingham, Suffolk, for Messrs. Gurney & Co. The architect is Mr. Bottle.

TENDERS

For alterations and additions to factory, Southwark-bridge-road, for Messrs. Welch, Margetson, & Co. Mr. R. M. Shaw, architect:—

Pattrick	£1,368	0	0
Avis & Co.	1,274	0	0
Brown & Robinson	1,175	0	0
Colls & Son	1,097	0	0
Newman & Mann	1,088	0	0
Nightingale	1,069	0	0
Hobson	960	0	0

For stables and coachhouse at Westcroft, Carshalton, for Mr. J. Welch. Mr. R. M. Shaw, architect:—

Cowley	£1,148	0	0
Clark	1,049	0	0
Hipwell	1,020	0	0
Nye	996	0	0
Mason	899	0	0
Jarred	893	0	0
Nightingale (accepted)	868	0	0

For new residence, for Mr. Thompson, at Marlborough, Wilts. Mr. S. Overton, architect:—

Pope	£1,835	0	0
Roberts	959	0	0
Hoskings	875	0	0
Nightingale	853	0	0
Dyer	840	0	0

For the erection of a villa, at West Malvern, Mr. Fletcher, architect:—

		If Cradley stone quoins and dressings, in lieu of red brick.
Bridgman & Nuthall	£1,435	£1,485
Porter	1,080	1,131
Wood & Sons	1,022	1,097

For erection of villa, No. 2. Mr. Fletcher, architect:—

Wood & Sons	£913	13	0

For reinstating the "Crown," public-house, Hatton-garden. Mr. Fletcher, architect:—

Fairhall & Weeks	£462	0	0
Hibberd	451	19	0
Bridgman, Nuthall, & Co.	383	0	0

For the erection of a warehouse at the rear of No. 33, Eastcheap. Mr. E. Woodthorpe, architect. Quantities supplied by Messrs. Welch & Atkinson:—

Chamberlen, Brothers	£3,233	0	0
Ashby & Sons	3,140	0	0
Perry, Brothers	3,137	0	0
Turner & Sons	2,999	0	0
Dove, Brothers	2,895	0	0
Conder	2,799	0	0
Browne & Robinson	2,790	0	0
Brass	2,760	0	0
Pritchard (accepted)	2,583	0	0

For Fire Brigade Station, Mile-end-road, for the Metropolitan Board of Works. Quantities supplied by Mr. T. Nixon:—

Stimpson	£3,660	0	0
High	3,300	0	0
Colls & Co.	3,200	0	0
Scrivener & White	3,058	0	0
Shurmur	2,998	0	0
Wood	2,947	0	0

For cemetery chapels, lodge, and gates, Littlehampton, Sussex. Mr. G. B. Nichols, architect:—

Whitehead	£1,775	0	0
Stevens	1,619	0	0
Knight & Co.	1,495	0	0
Snewin	1,490	0	0
Cockle	1,457	0	0
Barnes	1,400	0	0

For the erection of new brewery, chimney-shaft, &c., for the Lichfield Brewery Company, Limited. Mr. G. Scamell, architect. Quantities supplied by Messrs. Curtis & Son:—

Buildings.

Clark	£5,120	0	0
Marriott	4,950	0	0
Spencer	4,862	12	10
Burkett	4,743	0	0
Lovatt	4,333	0	0
Whittome	4,145	0	0
Dakin (accepted)	4,139	0	0

Ironwork.

Cochrane	£2,185	0	0
Burkett	2,070	0	0
Jukes	1,860	7	0
Dawncy	1,859	0	0
Spencer	1,833	0	0
Horsley Iron Company	1,818	0	0
Smith & Wood	1,809	0	0
Croucher	1,805	0	0
Darlaston Iron Company	1,797	2	6
Thornhill & Warham	1,720	0	0
Head	1,695	0	0
Gillgud	1,680	2	0
Orr & McLean	1,569	0	0
Crosskey (accepted)	1,550	0	0

For rebuilding six houses in Hare-street, Bethnal-green, for Mr. W. A. Thorp. Mr. W. Reddall, architect:—

Eaton & Chapman	£2,000	0	0

TO CORRESPONDENTS.

W. H. (there should be no cesspool at all in such a case).—Ch. L. (the committee will doubtless be glad to have opinion of our correspondent's colleagues).—F. T. D. (next week).—F. C. (did not arrive till Friday).—Justitia (the circumstances would seem to justify withdrawal, but in that case the full charge could certainly not be recovered).—B. E. I. (consult a solicitor).—W. I.—H. B.—Nemo.—W.—S. C.—Messrs. I.—A. J.—L. H.—Capt. H.—J. C. M.—Mr. P.—E. A.—P. B. W.—H.—F. H.—R. H. T.—Gas-fitter.—P. S.—H. F. K.—G. W. D.—B.—R. H. S.—T. O.—T. J. H.—R. B.—Mr. P.

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NINTH BONUS MEETING, January 4th, 1872.

The following are Extracts from the Reports of the Directors:—

1.—Progress of the Society in the Bonus Period.

"1° AS TO INCOME:
The NEW ASSURANCES were 2,159 in number, for an aggregate sum of 1,356,303*l.* at premiums amounting to 44,664*l.* per annum,—results which, viewed in relation to the depressed condition of Life Assurance during much of the period, cannot be regarded as other than satisfactory.
The YEARLY REVENUE was increased by over 21,000*l.* per annum, and reached 236,563*l.* on the 30th June, 1871.
The INTEREST yielded by the whole of the Funds, whether invested or uninvested, was 4*l.* 5*s.* per cent. on the average of the entire period, being fully 3*s.* per cent. more than that realised in the previous period. This increase was obtained not only without loss, but without the smallest impairment of security.

2° AS TO OUTGOINGS:
The claims which accrued by the death of 795 persons, assured by 977 Policies, amounted to 646,481*l.*
The mortality was very favourable to the Society, the payments having been below those estimated by fully 85,000*l.* and the deaths which occasioned them fewer by 92 than the number expected.
The EXPENSES incurred in conducting the business, always moderate and well within the provision made for them in the premiums, were fractionally less than in the previous period, and fell below 7½ per cent. on the Revenue.
It is thus seen that side by side with uniform success in the transactions of the Quinquennium, there was continuous growth in the resources and magnitude of the Society, which consequently stood, at the closing of the books, on a broader basis than at any former time."

2.—Financial Position of the Society on June 30th, 1871.

"The subsisting Assurances on the 30th June were 8,679 in number, assuring, with their Bonus additions, the sum of 5,445,028*l.*

The Assurance Fund at the date of Valuation was	£1,826,458	10	9
And the total calculated Liability	1,477,179	17	3
Leaving a Surplus of	£349,278	13	6

Deducting therefrom the permanent Reserve Fund of 50,000*l.* pursuant to Sec. 32 of the Society's Special Act of Parliament, there remains to represent the profit of the 5 years the large sum of 299,278*l.* 13*s.* 6*d.* an amount equal to 26 per cent. of the total Revenue from all sources during the 5 years, and exceeding by 59,831*l.* 6*s.* 5*d.* the surplus of any previous Quinquennium.

This Surplus is matter for hearty and unmixed congratulation, and justifies the preference shown by the Board for a well-selected business tending to profit. It must, however, be remembered that although owing in the main to ordinarily recurring causes, and to sources of profit having every prospect of permanence, it is, nevertheless, certain that its unprecedented enlargement is due to a condition of mortality favourable beyond previous experience, to be probably compensated under the law of averages by an increase of deaths hereafter, beyond those allowed for in the calculations.
Deeming it prudent to provide for such a contingency, the Directors have, under the advice of their Actuary, set aside the sum of 25,000*l.* for this purpose. Of the remaining 274,278*l.* 13*s.* 6*d.* they now recommend the division of 279,000*l.* a sum greater by 33,000*l.* than any previously divided, and sufficient to give to the Shareholders 9*l.* a share, and to the assured the largest bonus ever allotted to them."

3.—Results of the Division.

"Of the sum now to be divided, five-sixths, or 225,000*l.* will fall to the Assured, and will produce a reversionary addition to the Policies of 323,871*l.*
This Reversionary Bonus will average 49 per cent. or vary according to age from 34 to 89 per cent. on the Premiums received in the Quinquennium on all the Policies amongst which it will be distributed.
The Cash Bonus, which is the present value of the Reversionary Bonus, and therefore the true measure of the allotment, will average 29 per cent. on the like payments, as against 26 per cent. at the last Division, and 28 per cent. in 1862, which was the highest previous percentage. No comment can illustrate better than this comparison the merits of the present Division."

The next DIVISION of PROFITS will take place in JANUARY, 1877, and Persons who effect New Policies before the end of June next will be entitled at that Division to one year's additional share of Profits over later Entrants.

The Report above mentioned, a detailed account of the proceedings of the Bonus Meeting, the returns made to the Board of Trade, and every information may be obtained of
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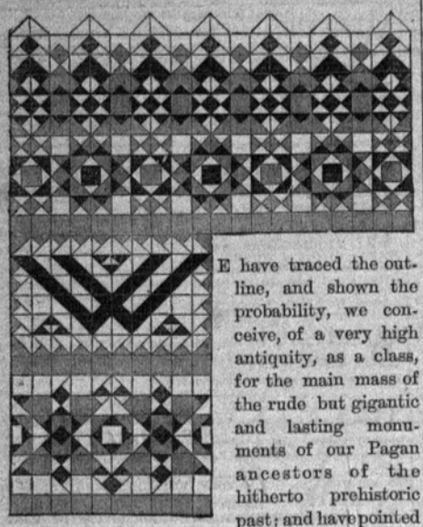
The Builder.

VOL. XXX.—No. 1520.

Megaliths and Tumuli: their probable Eras, "Architects," and Purposes.



WE have traced the outline, and shown the probability, we conceive, of a very high antiquity, as a class, for the main mass of the rude but gigantic and lasting monuments of our Pagan ancestors of the hitherto prehistoric past; and have pointed to the probable "architects" of these monuments; whatever evidence there may be in favour of a slight sprinkling of a few special examples, reared by their successive descendants, down into ages more or less approximating towards the historic close of the long existing prehistoric Pagan era; which is now fully proved and recognised as having extended back at least to the drift-implement men of glacial times,—probably 50,000 years ago.* And, above all, the dolmens appear to have preceded most of the other forms; although, among their African precursors, there would seem to have not only been dolmens, but stone circles single and concentric, trilithons, tumuli, and many other forms of such monuments, in vast, central, and, as it were, metropolitan and dispersive abundance. Even Mr. Fergusson cannot help inadvertently indicating the probably extreme antiquity of the dolmens, as a class,—or, at least, of the dolmen builders,—notwithstanding his sweeping general conclusion, without any legitimate or adequate premisses, that we can see, to the contrary. At page 329 he says:—"In the present state of our knowledge, *the cave men* [of the glacial or Arctic era] *and the dolmens seem not only conterminous, but their frequency seems generally to be coincident.*" And as to the era of the cave-men themselves and their stone implements (p. 509), he speaks of "the question of the antiquity of the cave men, or the palæolithic stone implements, the age of which we must, for the present at least, leave wrapped in the mists of the *long prehistorical past*"; these men, as he fully admits, having existed under Arctic or glacial influences, in their caves, conterminous with dolmen localities, in "a climate nearly similar to that of Arctic North America;" and "the inhabitants of these caves had all the habits of people now dwelling in the Arctic regions." Yet in Mr. Fergusson's arguments for the comparatively recent origin of the dolmens themselves all this appears to be forgotten. Into the apparent inconsistency, however, we have no space here to enter. Still, we may remark that his idea that the dark-hued (ex-African) dolmen-builders of this country originally inhabited the *low*-lands, and built there no dolmens; but were at last driven, by Bryts (or other comparatively recent races), up into the mountainous fastnesses of Wales and Cumberland; and only there and then began to build their dolmens, appears to us to be just as clear a perversion and reversal of the probabilities of the case as that the rude stone monument builders of Europe got their ideas from the Romans; or that the Greeks,—those mere children of antiquity, as Herodotus tells us the Egyptian priests regarded them, by comparison with the hoar antiquity of the Thebans of Upper Egypt,—instructed the Indian, Aryan, or other ancients of the East;—opinions which Mr. Fergusson almost seems himself to entertain. That the ex-African and Arctic dolmen builders of the high lands of this country, in Wales, Cumberland,* Northumberland, &c., the Isle of Man, and the high lands of Scotland and Ireland were aboriginally residents of these high lands, though of African descent; that their Arctic caves and dolmens were conterminous; and that they erected these dolmens there, as they did in Africa, Spain, and France, even *before* the low level lands of Britain had reached up to sea level after the drift implement era, we think, is much more probable than Mr. Fergusson's hypothesis. That they afterwards spread downwards from higher to lower lands is more likely.

But the chief object which we have now in view is to consider, as far as our limited space will allow, the probable *purposes* of the rude monuments of the Pagan era. And as we desire to agree with Mr. Fergusson, as far as we possibly and reasonably can, we shall first of all note what he says of these, or of certain of these, probable purposes; with which, to some extent, we agree, so far as they go.

The summary and result of the whole of his elaborate and interesting inquiry is, "that honour to the dead, and propitiation of the spirits of the departed, seem to have been the two leading ideas that both in the East and West gave rise to the erection of these hitherto mysterious structures, which are found so numerously scattered over the face of the Old World." Again he says (on same page): "With the fewest possible exceptions, and these of the most insignificant character, their connexion with the relics of *the dead* can be proved, from *all having become places for ancestral worship*; and having, under various forms, been used for commemorating or honouring *departed spirits*." They were reared, he conceives, "by dead-reverencing, *ancestor-worshipping* people" (379), who made "offerings to the dead," and were "kindred races of mankind, with whom respect for the spirits of deceased ancestors was a leading characteristic." Stone circles of theirs, in North Africa (311), were "evidently *connected with the religious rites* of the ancient inhabitants of these regions." The great stone circle of Drumbo, in Ireland,—580 ft. in diameter, and second only to Avebury itself, with "one of the most interesting of the Irish dolmens" in the centre, called the Giant's Grave,—or "bedd,"—and probably "the grave of a chief,"—Mr. Fergusson suggests (p. 229), may have been used "for celebrating *funereal games or ceremonies round the tomb*."

Well, surely all this goes to show that these circles, tumuli, and other earthworks and ramparts, dolmens, kists, chambers, and so-called altar-stones *were* something *more* than mere places of burial, even according to Mr. Fergusson's own ideas, since they were "places of worship," where "religious rites" and "ceremonies" of the dead, in "departed spirit worship" were conducted? And a very curious sort of hero-worship is that of the "dear spirits." How is it, too, then, that only Christians are said by Mr. Fergusson to have associated "*their* places of *worship*" with their burial-places; and that it is "applying a Christian precedent to a Pagan people" to say that the barrows of Stonehenge were "gathered round the sacred precincts" of that assuredly "sacred enclosure" (Druidically speaking) as a place of worship;—*we* shall not call it a "temple"? we hear little, if anything, from the Welsh bards themselves, as to "temples," but much about "sacred enclosures," "circles," "fenced enclosures," "ramparts," "sanctuaries," "dales where the courses surround the circles," the "sacred course," where—

"rapidly moving, in the course of the sky, in circles, and uneven numbers, druids and bards unite to celebrate the [central] Leader,"

"round the sanctuary of the uneven number."

"Whilst the circular revolution was performed . . . . . the assembled train were dancing . . . . . and singing in cadence, with garlands on their brows. Loud was the clattering of shields round the ancient cauldron [or cup, of inspiration from Ceredwyn] in frantic mirth."

For jovial cantrips such as these why might not the area of the great circle enclosing the two inner and lesser circles of Avebury (or the circuit of Stonehenge either) be five times that of St. Peter's at Rome? We need not imagine that such places were ever intended for congregations either sitting or standing in, as Mr. Fergusson supposes; for either witnessing spectacles or hearing harangues or sermons. But what arena could be better fitted for assemblies of people, singing, dancing, and circling round "the sacred course in a serene morning," in frantic mirth, with inspiration (of a kind) in their hearts, and garlands on their brows; till, like dancing whirling dervishes at their devotions, some one or other fell out of his ranks, "stirred up" or "awakened," in this "revival," into a fit of entrancement, sacred ecstasy, or God-possession, and was "chaired" as an Oracle, or as Deon,—thus to "celebrate the Leader"?

But what of the oaks and groves of the Druids? In hunting out these and other passages and expressions quoted from the Welsh bards, we did not happen to come upon even one about either trees or oaks any more than temples, far less serpents, sun-worship, or astronomy. Yet no doubt such were just the sort of people against whom the early Christian priesthood fulminated mandates against "the worshippers of trees *and stones*." Must not both stones and trees, then, have been venerated, and used, in their "sacred enclosures"? In the Sub-Himalayas there are Druids who chant or sing and dance in circles of trees, with a stone at each tree.

But all this has nothing obviously to do with "departed spirits," after all. The one central druidical "Leader" was their God, Deon, or Hu, Apollo, or whatever we may call him, as manifesting Himself in a taliesin, or initiated and inspired bard or druid, in the caer, or chair or figurative womb, kist vaen, dolmen, or "simulative tomb" of "the Goddess of *Death*," Ceredwyn. "I have *died*: I have revived: I am now Taliesin," said the bard. His death was the simulative death of entranced inspiration, in the simulative tomb, kist, sarcophagus, or coffin, whence he was "born again," into the new and divine awakened life of trance,—"the life of the Gods." "I require men to be born again," said Deon, as the true purpose of the druidical religion; and the Taliesin or God-possessed says, "twice have I been born," and "complete is my chair in Caer Sidi: neither disorder nor old age will oppress him who is within it": he was now one of "the deathless brotherhood," of "the twice-born,"—"first, born *in* the egg [an ovate]: next, born *out* of the egg [a bard]."

Far other than mere "departed spirit worship," as this was, the druidical like other doctrines may have been apt to degenerate into it, with its trance and other mediums and spirit-circles; and, in a sort of saint worship, the sacred enclosures may have become surrounded and embedded with the dead, just as every second or third Christian

* See p. 197, *ante*.

* It is a curious fact that the supposed great range of high mountain land in the heart of Africa is called by natives "Jebel el *Kamri*." It is so named in Hughes's Physical Map of Africa. The word, however, seems still more closely akin to "Cymry" than to "Cumberland."

Church is by its churchyard and its tombs,—its God's Acre, and its Paradise, or city of the dead; but so far from this implying the "application of a Christian precedent to a Pagan people," it is the Christians who must have adopted the Pagan practice of associating *their* places of burial with their places of *worship*, even on Mr. Fergusson's own principles. There are churches in the Scottish Highlands which to this day are called "The Stanes," or Stones, as if even the name of some Pagan Stonehenges had been adopted by the Christians, as well as the Pagan sites and practices too.

The fact that the Romans made no allusion to Stonehenge, we may here note, is of little force, considering that the French occupied Algeria for many years without taking the slightest notice of all the tens of thousands of dolmens, stone circles, &c., there and elsewhere in North Africa.*

Whilst pointing out the general association of the actual tombs of the dead with simulative tombs, devoted to religious rites, it must be noted that according to Mr. Fergusson himself a host of instances occur in which dolmens or kistvaens have all the appearance of being nothing more than what he calls "simulated tombs." But of the precise uses or purposes of these simulated tombs he hardly gives any definite idea. He thus speaks of these "Bedds," as the Irish call them, in connexion with the real and generally underground tombs, kist-vaens, or dolmens, with special reference to a singularly typical tumulus, with three concentric circles of stones, rising circle above as well as within circle, round and up to a central dolmen at the top, in Aveyron, and called "the dolmen de Bousquet."

"So far as I know, none of these dolmen-crowned tumuli have been dug into, which is to be regretted, as it would be curious to know whether the external dolmen† is the real or only a *simulated tomb*. My own impression would be in favour of the latter hypothesis, inasmuch as *a true and a false tomb are characteristic of all similar monuments*. In the Pyramids of Egypt they co-existed. In every Buddhist tope, without exception, there is a tee. . . . . A still more apposite illustration, however, is found in the tombs around Agra and Delhi. In all those of any pretension the body is buried in the earth, in a vault below the floor of the tomb, and a gravestone laid over it; but on the floor of the chamber, under the dome, *there is always a simulated sarcophagus* [or kist], which is the only one seen by visitors. This is carried even farther in the tomb of the great Akbar (1556, 1605). Over the vault is raised a pyramid, surrounded, not like this tumulus, by three rows of stones, but by three rows of pavilions; and on the top, exposed to the air, *is a simulated tomb* [or kist], *placed exactly as this dolmen is*. No two buildings could well seem more different, at first; but their common parentage and purpose (?) can hardly be mistaken; and it must be curious to know whether the likeness extends to the double tomb also."

Of course, Mr. Fergusson means it to be inferred that the encircled or enclosed and dolmened tumulus, being so like in principle and arrangements to Akbar's monument, must be of much the same age, although the evidence for that is just about as slender as it would be to urge that the stone implements of Britons (if we may so [call them) of the glacial drift must be of much the same age as the stone implements of Britons of the Roman era (nearly 50,000 years, at least, later, probably), because the one sort is "exactly like" the other.

The chief races who honoured their dead by the peculiarity of tomb-rearing are thus specified, although the great North African dolmen and circle builders, and High Asiatic tumulus rearers, are not so explicitly named as they might be.

"The peculiarity is *most characteristic of* THE EARLIER UNDERLYING RACES, whom we have generally been in the habit of designating as the Turanian races of mankind. But if that term is objected to, the tomb-building races may be specified,—from the East,—as the Chinese; the Mongols in Tartary, or Mogols, as they were called, in India; the Tartars, in their own country, or in Persia; the Ancient Pelasgi, in Greece; the Etrurians, in Italy; and the races [North African and Upper Asian, we shall call them], whoever they were, who *preceded* [and produced?] *the Celts* in Europe. But the tomb-building people, *par excellence*, in the old world, were the Egyptians [African, of course]. Not only were the funereal rites the most important element in the *religious life* of the people; but they began at an age earlier than the history or tradition of any other nation carries us back to. The great pyramid of Gizeh was erected certainly as early as 3,000 years before Christ; *yet it must be the lineal descendant of a rude-chambered tumulus* or cairn, with external access to the chambers [just such a one as that of New Grange, or the 'Sorcery Hall' (or simulative tomb?) at Maeshowe]; and it seems difficult to calculate *how many thousands of years it must have required before* such rude sepulchres as those our ancestors, erected,—many (?) probably after the Christian era,—could have been elaborated into the most perfect and most gigantic specimens of masonry which the world has yet seen."

If we rightly understand this, surely it means that the chambered tumuli, such as those of our ancestors, are of a much more ancient type, at least, than that of the Pyramid of some 5,000 years of age, and just such as the North African *predecessors* of the Pyramid builders, must have given origin to, both in Africa and Ireland. Nevertheless, the tumuli builders of the East may have combined with the chamber or dolmen builders of the South in the enterable chambered or kisted tumuli, which are said to be more peculiar to the West than either to the South or to the East, *alone*.

Anyhow, *simulative tombs* are regarded by Mr. Fergusson as a very general feature connected with megaliths and tumuli. But not only so: the dolmens, as a class, are simulative tombs, the connexion of which with actual tombs at all has not been established, even when associated with tumuli, as we have just seen. And the *simulative tomb*, whether with or without a real one, is a mystery which requires a different line of research altogether than a merely archæological or antiquarian one, to enable us to divine or reach its purpose. The author of "The Buddhist Emblem of Architecture,"* we do believe, was not far off that purpose in the brief generalisation, from various ancient sources, here quoted; and which, we may at once say, manifestly relates, whether he knew it or not, to the *simulative death* of entrancement, often in *simulative tombs*, and kists, dolmens, or bedds, coffins, "elegant couches," as in Egypt and at Babylon, or on altars of self-"sacrifice," divine self-abnegation, or God-possession, as in modern Thibet, which simulative death has been already shown, in the *Builder*, to be a key to ancient religious mysteries,† both magical, as were the Pagan religions in general, and especially those of a higher order, as were the Buddhist and Brahminical, the Egyptian and the Druidical; no less than the Jewish and the Christian, or the Free-Masonic mysteries.

"In all those mysteries which were held in such high veneration by the ancients, and the types of which have descended in a chain of unbroken succession even to our own days, the attainment of the crowning point of the craft was *typical of death*. It was alone by passing through the vale of its shadow that perfect *light*, [the well-known '*lucidity*' of entrancement] could be obtained. Apuleius, in the eleventh book of his 'Metamorphosis, or Fable of the Golden Ass,' describes minutely this completion of initiation; the *night-like darkness*; the *approach to the confines of death*; and then, in the very midst of this darkness, *the Light revealed* to him [and *in him*]. In some of the various versions of these mysteries it is said that the candidate was shrouded in the shudder-cloth of *death*; was *placed in that narrow home to which we all must go*; was *raised again*, and went forth the *new-born and perfect* craftsman. In others it was represented by the candidate passing through an oval, symbolising that as he entered this scene of woe so must he go forth again. Thus was it that we find *death* styled, in ancient writ, the *portal of life*."

There is an allusion here to "the narrow home" which reminds us of this passage in the Taliesin records of the Druids:—

"*In the dales*, where THE COURSES *surround* THE CIRCLE [or Caer] He [Hu] arouses who is partly covered and partly bright. [He is now, says Davies, in the mystic *cell* (or kist or chamber), giving direction to his attendants.] . . . Let the renowned, the enterprising [Eidiol or Ambrosius, whose actions are recorded in the Gododin] be lulled *in sleep*. But let Hu mildly warm him *with his divine presence*. The man who *rushes forth*, when the foe lies in ambush, is the BED-*fellow* of him who RESTS *in the narrow house beneath the tumulus*."

The allusion to a chambered tumulus like those encircled "sorcery-halls" at Maeshowe in Orkney, and New Grange in Ireland, seems here to be evident; but we need not wait to consider the special meaning of the context, which relates to Him,—Hu,—of whom it is said that he "lived *and died* alternately." We merely wished to show that the *simulative tombs* were associated with *simulative death*, as indeed has already been done, in the *Builder*, while treating of the Great Pyramid of Egypt‡ and elsewhere. The Druidical and various other Pagan doctrines have also been treated of on this principle in our journal, in a series of Letters, to which we may here refer.§

But merely to indicate all that this subject involves would require an inquiry and a volume at least as extensive as Mr. Fergusson's; and all we can do here is merely to offer a few disjointed remarks on so vast a subject.

That the *worship* of "departed spirits," real or imaginary, has been one form of error in *religion* which was very prevalent in ancient times appears to be undoubted; and we may just hint that this Pagan form of error, *as a positive and intentional* "*religion*," seems to be on the high way to a full-fledged revival in modern times.

There are two great divisions into which all so-called religion may be said to have ranged itself in practice, both in old and in recent times,—Monotheism and Polytheism. That the veneration of the dead, or the worship of "departed spirits," belongs to the order of polytheism there really cannot be a rational doubt. The object of worshi pbecomes "a God," whatever it be; and even were it an image or idol,—"Gods of silver and gold,"—or even a stone, far less a real or supposed human being, "departed or not departed." "These be thy Gods!" a phrase applied to those who "served" the "golden calf," may quite as legitimately be addressed to "the *servants* of the spirits," as one class of modern Spiritists actually call themselves. The witch of Endor called her own "familiar spirits" *Gods*; and Samuel the Seer was venerated by her as one of those Gods. Of such as she, no doubt [in Isaiah lxv. 3], was that "people who . . . . . sacrificeth in gardens and burneth incense [for enchantments] upon altars of brick; which remain (and sleep, as Herodotus says) among the graves, and *lodge in* the monuments," kist-vaens, dolmens, chambers, tumuli, ar other "simulative tombs."

The monotheistic principle has also been, to a certain extent, mixed up with the polytheistic; but in many cases the priesthood upheld the polytheistic for exoteric purposes, while they were well enough acquainted, esoterically, with the monotheistic; and, indeed, the multitude of Gods in Pagan mythology, apart from "departed spirits," was little else than a multitude of names given to one ruling principle, "one and the selfsame Spirit" of Nature, God, or Goddess, in whom all live, move, and have their being, or by whom all subsist. Thus Ceres was called the "many-named God;" and according to Lucius, at his initiation, Isis declared herself to be Nature, and "the uniform manifestation of Gods and Goddesses." After this multinomular God had enumerated a variety of her names, such as Juno, Venus, Proserpine, Ceres, and Minerva, she said, "Under all these names, and with many different ceremonies, *I am the only Deity whom the universe invokes*." And whatever Isis was, as an oracle manifested in her "servants," she was no mere "departed spirit," far less any endless variety of departed spirits, such as the 333 millions of Hindu Gods may have been to those who were instructed to dwell in the tombs (like Chaldeans in cities of the dead), and wear grave-clothes, even though Brahma was always *one* God, or Brahma, Vishnu, and Shiva, three in one. It is very curious, however that Isis did call herself "*the Queen* of departed spirits," and an unruly set of subjects to Queen Isis, or Ceredwyn, they occasionally seem to be in their modern manifestations; and much they stand in need of a ruler and a putter-down. It is no less curious, too, that this self-announced title is not quite unprecedented, as a title, even in sacred writ. In Numbers xvi. 22, God himself is called "*the God of the spirits* of all flesh." Either of these, if they be not "one and the selfsame Spirit" of the Universe, is a God of Gods, and not such a mere rabble of minor Gods, unruly and unruled, as are those who actually rule or govern "the servants of the spirits."

The Universal Spirit, as the oracular monotheistic principle, whether as God or Goddess, has a close relationship to "the flesh." The body of man is the temple of God,—the temple of the Holy Spirit or Holy Ghost: "the body is for the Lord, and the Lord for the body." And in truth *God-possession*, which means to be "not in the flesh but in the Spirit" of ecstatic and sacred entrancement, is, as has been heretofore remarked, the leading idea of all *monotheistic* religion; as *departed-spirit-possession* is the leading idea of all really *polytheistic* religion. It is to "one and the self same (divine) Spirit" that monotheism exhorts

* The general principles of which we have endeavoured to sketch the first rough outline will soon solve the whole problem of the ethnic origins, and even the probable dates, of such structures as Stonehenge, Avebury, and New Grange.

† It must be noted that Mr. Fergusson uses the name dolmen as a class title, which includes kist-vaens as well as dolmens proper, and cromlechs, being of kindred formation, whether great or small.

* Captain T. Latter, B.N.I., Assistant Commissioner, Arracan.

† See Letters referred to below.

‡ See articles on the Great Pyramid, in *Builder* of 24th September, 1864, and 19th September, 1868.

§ See Letters in *Builder*, by J. E. Dove, on "Wing and other Symbols," October 16th, 1858, and January 15th, 1859; on "Geometrical and other Symbols," April 4th and 18th, June 6th, and July 11th, 1863; on "Circular Rock Marks and other Symbols," July 2nd, October 22nd, and December 17th, 1864; and various others.

* See in *Builder* of 17th December, 1864, on "Rock and Sorcery-hall Symbols."

mankind to present and give up possession of their bodies, as temples, and as living sacrifices, at fitting and appointed times, in which to manifest "the Spirit of Truth," or to constitute "the Oracles of God." It is to an endless succession of different and merely human spirits, illusory or real, that polytheism calls upon them to give up possession of their bodies as "servants of the spirits,"—not as "servants of God,"—and to constitute questionable oracles of these their "Gods," with their seers and prophets, or trance and other "mediums," and their tables or altars, spirit circles, "services," prayers, hymns, and other mockeries of "religion." A few of the "trance mediums," moreover, among the modern venerators of departed spirits, do devote themselves mainly to the "service" of some few, or *one even*, among the hosts of "spirits"; and the proper place for such a "medium," who gives up the possession of his body to another, who has lost his own, to be talked through, or written through, or oracled through, while "in the trance," or simulative death, should be in a Pagan dolmen, or other "simulative tomb," on the top of the grave of the defunct interlocutor, to whose quasi-oracular utterances he is so devoted, as "a servant of the spirits," in these their second-hand inspirations. Where else so appropriately as among the tombs, and the dead, or in church-yards, could "departed-spirit-worshippers" practice their "religion," as in ancient Pagan times.

These remarks, however, only apply to a certain fanatical class of the modern spiritists, and not to those who are scientifically engaged, or merely as a pastime, in "trying the spirits,"—the "psychic forces," magical forces, or whatever they be,—an inquiry of a very curious and interesting order; and it would be well the chaff were winnowed from the wheat as soon as possible, in this more than threatened modern revival of hero-worship and polytheistic Paganism.

The ancient Pagan worship of departed spirits must thus be distinctly contradistinguished from any one of the various more or less pure or impure forms of ancient monotheism, although they were, doubtless, more or less mixed up with it as they sank into more and more degraded and superstitious forms of "worship." These more or less pure monotheistic forms of religion included the Buddhist and Brahminical, the hierophantine of Egypt, and even the Druidical, no less than the Judaic and the Christian; as cannot but appear from evidence already given in the *Builder*. Here, however, we cannot dwell on this subject. There is even a lower depth into which the ancient religions probably sank than into the worship of "departed spirits," whether with mediums entranced or not entranced; and that is into the region of mere dreaming and unentranced sleep, as their only source of *inspiration*, or divination; and Sir John Lubbock was probably not very far wrong when he said, in a lecture at Liverpool on the social and religious condition of the lower races of men, that—

"the ideas of *religion* among the lower races were intimately associated with, if indeed they had not originated from, the condition of man *during sleep, and especially from dreams. Sleep and death* [he continued, though this is much more the case with *trance and death*] had always been regarded as nearly related to one another. . . . the savage would naturally look on death as a kind of sleep. . . . . the events in his dreams as real as those which happened when he was awake," &c.

We can now, from all that has been said, see pretty clearly the meaning of the passage from Herodotus, as to a North African people, the Nasamones, thus referred to by Mr. Fergusson (p. 407):—

"From Herodotus we learn that this people buried their dead sitting, with their knees doubled up to their chins [which is the *sleeping* posture of the Thibetan peasantry, we may here remark; and a posture of the ancient dead which has been noticed in this country as well as in America], and were so particular about this that when a man was dying, they propped him up that he might die in that attitude (iv. 190). We also learn from him that they had such reverence for the tombs of their ancestors that it was their practice, in their solemn form of oath, to lay their hands on these tombs, and so invoke their sanction; *and, in their mode of* DIVINATION, *they used to* SLEEP *in or on these sepulchres* (iv. 172)." That is, probably, be it remembered, "in or on" the dolmens, which Mr. Fergusson thinks the Nasamones may probably claim, as one form of [simulative?] tomb in ancient use by them and their forefathers, although he cannot think that all the thousands of North African dolmens, even in Algeria alone, were theirs. Were not these Pagans also like those in Judea already alluded to, of whom Isaiah spoke (lxv. 3-4), as those who "remain among the graves and *lodge in* the monuments,"—that is, probably, sleep in them, too, by night? "I slept in 100 caers," kist-vaens, or dolmens, or at least sacred enclosures, islands, or whatever they were, said the Taliesin, and "have died and revived," or been "born again." And as such people also "sacrificed in gardens, and burned incense upon altars of brick"; so the Druids sacrificed in groves, although much less is said as to that, as we have remarked, in the Taliesin records, than about caers, and narrow houses, sanctuaries, sacred islands, lakes, circles, revolutions, inclosures, and boundaries.

The sleep alluded to by Herodotus may have been, even in his time, the same as the "sacred sleep," or "temple sleep," of the Egyptians, which, in truth, was entrancement, high or low, and regeneration into a new life, in theoretical principle at least, and however degraded or false,—however dissimulative no less than simulative of death, it may then have become in practice. It was the same state that Herodotus indicated, in his account of the concentric circled, or rather voluted, pyramidal tumulus, or tower, of Belus, at Babylon, with a shrine, *or actual tomb below, and a chapel, or simulative tomb, at the top*, in which a "chosen priestess" lay, on "an elegant bed," at a golden table, and was nightly visited by Belus, or entranced by the God; when, probably, the oracles uttered were written down at the table. Here is a type of the probable uses of the ruder kist-vaens, dolmens, bedds, cells, chapels or oratories, caves, and crypts of various ages.*

Such then appears to us to have been the chief purposes of simulative tombs, such as dolmens, kists, bedds, chairs, chambers of tumuli, and also many altars. They were probably used, whether by "departed spirit worshippers" or not, in the production of simulative death, or entrancement, real or false,—or in "waking" the mystically "dead"; and whether among the actual tombs or tumuli of the really dead or not; and Mr. Fergusson's discovery of so extensive an association of "simulative tombs" with real ones, and also apart from them, is a most significant and important one; and whether the object of worship, or service, by human beings in "God-possession," were the one divine monotheistic Spirit of the Universe; an endless polytheistic host of "departed spirits"; or a mere dreaming delusion of the insane, "possessed by devils, coming out of the tombs."†

In concluding this very imperfect outline of a new argument in favour of the probably great antiquity in general of the mass of gigantic monuments throughout the old world, we must acknowledge how materially indebted we have been to Mr. Fergusson's own laborious and suggestive pages, and map, for being able at all, now for the first time, to put into something like definite form, this outline of an idea which we have long entertained, as to the probable eras, architects, and purposes, of these rude megaliths and tumuli; and, without the aid of this very interesting and important volume itself, in which confusion is reduced to something like order, we do not see how this could have been done with the least chance of a favourable reception by archæologists.

* In the Kensington Museum, amongst the interesting and curious photographs of Indian temples and tombs, one, called "the Muddan Mahal," at Jubbulpore, appears to be in the form of a chapel, erected on the top of a dolmen, with access to it by outside stairs.

† Matt. viii. 28.

THE PUBLIC HEALTH BILL.

A BILL to amend the law relating to public health, prepared and brought in to the House of Commons by Mr. Stansfeld, Mr. Secretary Bruce, and Mr. Hibbert, and ordered by the House of Commons, on 16th February, 1872, to be printed, has just been issued.

The Bill has no preamble. Those who are attached to time-honoured associations may be shocked. For our own parts we are disposed heartily to welcome any well-considered attempt to escape from that barbarous verbiage of legal meshwork with which our statute-book afflicts and disgraces the age and the country. An approach to either the incisive lucidity of the French publicists, or the elegant perspicuity of the Italian legists, would be hailed by all plain-dealing, honest men. That the case which exists for legislation, in any instance, should be explained and admitted, before a Bill is proceeded with, is, of course, proper. But it is not necessary to commence with WHEREAS in large letters. Not only are we struck with this novelty in the mode of commencement, but still more with the care and skill that have been evidently devoted to mastering and explaining the subjects dealt with by the Bill. Its draughting forms an exception to the cumbrous and slovenly diction which we have learned to expect, as matter of course, in any new Act of Parliament.

The Public Health Bill contains ninety clauses, and occupies forty pages of letter-press. Commencing with the usual preliminaries, defining the title, the application, and the date of the commencement of the proposed operation, of the Act, it devotes the seventeen following clauses to the establishment of sanitary authorities. It goes on to deal with the alteration of areas, the union of districts, and the repeal of local Acts; which subjects occupy, altogether, eleven clauses. Clauses 32 to 50 deal with the subject of nuisances; 51 to 53 with that of water supply; and 54 with gas supply. Seven clauses follow, treating of hospitals and provisions for the sick; three deal with the subject of analysing water; and the remainder of the Bill consists of miscellaneous, and saving clauses, directions as to legal proceedings, and definitions. Under the miscellaneous clauses is to be found an important power granted to any "sanitary authority to buy up any water-mill, dam, or weir which interferes with the proper drainage of the district," which we regret to see nullified by the condition that Parliamentary sanction must still be sought, in order to give compulsory power of purchase to the Local Government Board.

England is divided by the Act into sanitary districts of three descriptions, namely, urban, rural, and port (including riparian) sanitary districts. Urban sanitary districts are either boroughs, in which the sanitary authority is the council; Elective Improvement Act districts, under the direction of the Improvement Commissioners; or Local Government districts, in which the authority is that of the Local Board. A rural sanitary district is commensurate with the area of a rural union; and the guardians of the union are to form, with certain exceptions, the rural sanitary authority.

From the first meeting of the sanitary authorities constituted by this Act all other sanitary authority shall devolve on the newly-constituted Boards. No less that six sets of Acts of Parliament, in addition to the Local Government Acts, are mentioned as forming the basis of the powers of the new authorities. There are the Sewage Utilisation Acts, the Nuisances Removal Acts, the Common Lodging-house Acts, the Diseases Prevention Acts, the Artizans and Labourers' Dwellings Act, and the Bakehouse Regulation Act. It would be desirable, if it be felt unadvisable to attempt during the present session a consolidation of all the legislation, the enforcement of which is thus committed to the new authorities, that a schedule should be attached to the new Act containing the enacting clauses of the earlier laws, so that the new authorities should not be compelled to provide themselves with an extensive legal library.

A medical officer of health is to be appointed by every urban sanitary authority from and after the expiration of three months from the commencement of this Act, in the manner provided by the 40th section of the Public Health Act of 1848. Here, again, we ask to have the section in question appended to the new Bill. Clerks and treasurers, inspectors of nuisances, and any other necessary officers and servants may be appointed by the new authorities.

Inspectors of the Local Government Board are to have, for the purpose of the Sanitary Acts, similar powers to those which the Poor-law inspectors have under the Acts relating to the Poor Law, for the purposes of those Acts. Here, again, a clear and compendious summary of actual legislative enactments is absolutely necessary for the guidance of the inspectors as much as for that of the Board.

All expenses incurred by urban sanitary authorities are to be defrayed as provided for by the Local Government Act, if in force in their district. If the Act is not in force at the commencement of the new law, the council of a borough are to have recourse to the borough rates, and the Improvement Commissioners, to any rate leviable on their district.

The expenses incurred by any rural sanitary authority will be either general or special; the former including the expenses of the establish-

ment and officers, the expenses in regard to disinfection, the providing conveyance for infected persons, the providing of hospitals, and all other expenses not defined as special. The latter comprise the expense of construction of sewers within the district, the providing of water supply, and any other expenses legally incurred, and determined by the Local Board to be special. The general expenses are to be defrayed out of a common fund, to be raised out of the poor-rates of the parishes forming the district. Special expenses are to be separately charged on each contributory place; the sanitary authority issuing its precept to the overseers of each such contributory place for the payment of the same.

Power is given to Local Government Boards to make over their authority to the conservators or commissioners of any port of England for the jurisdiction over such port and its waters; and riparian sanitary authorities may be empowered to act in like manner; the expenses being regulated on the same principle as in the case of the contributory districts.

Consolidation of areas, and of local authorities at present constituted, is facilitated by the new Act. In the case of a borough comprising, with its area, the whole of an Improvement Act District, the authority may be transferred to the borough council. Where a special drainage district has been formed, but no works, involving the raising of a loan, have been commenced, the district is to be dissolved, and will merge in the parishes. When works have been executed, in such circumstances, the confirmation of Parliament to the provisional order of the Local Government Board is necessary. No simple mode of obtaining such Parliamentary assent is, however, contemplated by this clause of the Bill; which, to this extent, must be regarded as a convenient seed-bed for numerous future Acts of Parliament. The assent of some central authority might, with extreme advantage, be substituted for this cumbrous process, or the provision, which occurs later in the Bill, of allowing a regulation that, after being laid on the table of the House of Commons for forty days, has met no opposition, to be taken as definitive, might apply to the whole measure.

Where it appears to the Local Government Board, on the application of the sanitary authorities of any sanitary districts, to be desirable to form the same into a united district, power is given to do so by what is rather enigmatically termed a "provisional order." The term is explained by reference to the Local Government Act of 1858. The objects of such union are stated to be the prevention of the pollution, or of the obstruction, of streams; the procuring a common supply of water; or the making of a main sewer, or combination of a system of sewerage, for the districts to be united. It is, however, added, "or for any other purpose of the Sanitary Acts." The mode of forming such united districts, the description of the governing body, the regulations as to constitution of joint boards, and the mode of charging expenses and of raising funds, are then severally detailed; and power is given to the Local Government Board to repeal, alter, or amend any local Acts which are inconsistent with or relate to the same subject matters as the Sanitary Acts.

We now come to the very important part of the Bill that stands under the simple title of "Nuisances."

Every person who throws into any stream rubbish, cinders, refuse of manufacturers, or other solid matter, in such quantities as to interfere with the due flow of, or to pollute, the water is to incur the penalty of 5*l.* for the first offence, 10*l.* for the second, and from 1*l.* to 2*l.* for every day during which the offence is continued. On a third or subsequent conviction, the penalty is increased to 20*l.*, with a daily fine of from 2*l.* to 5*l.* Every person who turns into any stream any sewage matter, solid or liquid, or any other polluting liquid, is to incur similar penalties. Two years' grace is allowed for the continuance of any existing nuisance, so far as the operation of this Act is concerned. The question of the liquids which shall be considered as polluting is removed from the ground of conflicting opinion, and placed upon that of scientific analysis,—a bold and wise step. The tests specified are these:—

The presence, in 100,000 units of water, taken by weight, of either three units of dry mineral matter; one unit of dry organic matter; two units of organic carbon; ·03 of organic nitrogen; two units of any metal except potassium, sodium, calcium, or magnesium; ·05 of metallic arsenic; one unit of free chlorine; or one unit of sulphur, in the condition either of sulphuretted hydrogen or of a soluble sulphuret; shall be held to constitute a polluting liquid. Further, any liquid of an acidity greater than that which is produced by adding two parts by weight of real muriatic acid to 1,000 parts of distilled water; any liquid of an alkalinity greater than that produced by adding one part of dry caustic soda to 1,000 parts of distilled water; and any liquid which exhibits by daylight a distinct colour, when a stratum of it 1 in. deep is placed in a white earthenware vessel; is to be held polluting. There should, we think, be some explanatory clause added to prevent any drainage or irrigation works in mountain districts from being hereafter impeded by the foregoing provisions. A spate in the Highlands, for instance, would bring down a peat-coloured torrent that would, no doubt, show a golden stain in the test-basin of white porcelain. The intention of the provisions is clear; but a word of explanation would not be here out of place.

The Local Government Board may alter the foregoing conditions by order. In case of rendering the stringency less, they may do so absolutely. In case of increasing the stringency, the alterations are only to come into force when they have lain for forty days before Paliament. This mode of courting Parliamentary challenge appears to avoid the objection which we mentioned as lying against clause 65. The mode of obtaining Parliamentary sanction to the acts of the sanitary authorities ought, however, to be the same in all cases. A special enactment, applying to the whole Bill, would simplify and improve this part of the arrangement. The sanitary authorities are empowered, by clause 34, to take any proceeding they may think fit, at law or in Chancery, for the protection of streams; and no plea that other nuisances exist is to be available in extenuation of any individual nuisance.

A penalty not exceeding forty shillings is imposed on any person having charge of a fire, the smoke of which is found to be a nuisance. The Nuisances Removal Acts and the 19th section of the Sanitary Act of 1866 are referred to in this clause, and should be appended to the Bill.

The 37th clause is so important as to require citation in full. All sewers and drains, whether public or private, shall be constructed, provided with means of ventilation, and kept so as to effectually prevent such sewers and drains from being dangerous to health, and any sewer or drain not so constructed, ventilated, or kept, shall be deemed a nuisance under the Nuisances Removal Acts, and, whether it be on public or private premises, may be dealt with under the said Nuisances Removal Acts as if it were on private premises. This very comprehensive clause will, no doubt, provoke full discussion. The force of the word "kept" is absolute.

A long-vexed controversy is to be closed, and a long-standing scandal to our civilisation removed, by the six lines which form clause 38, making it the duty of the urban sanitary authorities to provide for the proper cleansing of streets (pavements ought to be distinctly specified), as well as for the removal of all refuse or unclean matter from all closets and cesspools. Here, too, is a clear proof of the earnest determination of the framers of the Bill that it shall not remain a dead letter. If the sanitary authorities, after due notice, omit for two days any such cleansing, they shall pay to the owner of the house so neglected a penalty not exceeding ten shillings a day. We take it that this provision is not only novel, but likely to be extremely effective. The only weak point that strikes us is, that it is not stated from which funds the penalty is to be defrayed. If it comes out of the rates, it only brings a moral pressure to bear on the neglectful authorities. But even that is much. Power is given to the officer of the sanitary authority to inspect premises; and a penalty not exceeding forty shillings is imposed for throwing rubbish into any sewer or drain.

The 49th section of the Public Health Act of 1848, providing that houses are to be drained into any sewer that runs within 100 ft. of their site, is so far modified as to allow of the construction of a new sewer, instead of making communications with an old one, where desirable.

Clauses 44–46 relate undoubtedly to the protection of the public health; but, although admirable in their enactments, would hardly have been looked for under the head of nuisances. They provide that the milk of any animal suffering from any tubercular, contagious, or infectious disease shall be deemed unfit for human food; and that milk and tea shall come under the provisions of the Nuisances Removal Act of 1863. A penalty not exceeding twenty pounds is attached to the sale of any unwholesome food; and a warrant may be granted by a justice, on application from a sanitary authority, to search for unsound food. These are admirable clauses.

Foul pumps or wells are to be closed, by the order of two justices, on the application of any sanitary authority; and the inhabitation of any building unfit for human abode may be prohibited in the same manner.

Power is given to sanitary authorities to carry water mains, when requisite, without their own district, as well as to purchase water rights. All water supplied either by the sanitary authority itself, or by any waterworks company or person, shall be filtered when necessary, and shall be free from all impurities; and a penalty not exceedng 50*l.* is imposed for the supply of impure water; without relieving the offenders from liability to any further proceedings, and without removing the obligation resting on the sanitary authorities to enforce the provisions of the section. This is root and branch work, and, if carried out, will be a most important safeguard to human life.

Power is given to any urban sanitary authority to light their district with gas, or to buy up, with the assent of three-fifths of the shareholders, the property of any gas company.

Clauses 55 to 61 lay on the sanitary authorities the duty of establishing hospitals and dispensaries, of supplying medicines during epidemics, of providing a mortuary, and of obtaining returns of sickness. The water supplied for domestic purposes is to be analysed from time to time, as well as all matters polluting streams. To the power to buy up water-mills, given by clause 65, we have referred. The Local Government Board have further powers entrusted to them with reference to section 35 of the Sanitary Act of 1866, and further explanation is given as to section 69 of the Public Health Act of 1848, and section 38 of the Local Government Act of 1858. These sections ough[illegible] appended to the present Bill.

Clause 69 imposes a penalty not ex[illegible] 20*l.*, or one month's imprisonment, on [illegible] making false representations with resp[illegible] fectious disease, which may have existe[illegible] three months, in any house or rooms let [illegible] A great howl will probably ascend from [illegible] watering-place at this most righteous [illegible] lightened check on our favourite "liber[illegible] subject." The liberty of any one t[illegible] ease is thus boldly denied by the Bi[illegible]

The remaining clauses give d[illegible] detail, which those whom they conc[illegible] study in the Bill; a set of definitions, or so[illegible] glossary of some of the legal terms employed, occupying the two pages which constitute the 90th clause.

The Public Health Bill may be, and has been, criticised on two grounds. First, that it does not consolidate the existing legislation; secondly, that it is permissive, and not compulsive. It may be fairly urged, however, that, important as consolidation is, the Government are in a better position to know whether the time has arrived for effecting it, than any one else can be,—not, as Prince Bismark pithily remarked, because they are more clever than any one else, but because they must know more on the subject than any one else. An attempt to do more at this moment might, in case of opposition, have resulted in the embarrassment of the whole question. We suggest that the several clauses of other Acts which are specially referred to in the present measure, should be printed as an appendix to the same. As to the second point, we can only say that, although we believe more is needed, the bull has been taken by the horns; and an amount of compulsory cleanliness must result from the passing of this Bill in its integrity, that will greatly astonish and confound the friends and patrons of filth.

The Bill is, for the most part, clearly and well arrayed. Further progress in that direction we hold to be both possible and desirable. By the insertion of one or two preliminary clauses, as in French legislative and legal documents, a large amount of repetition may be avoided, and an Act of Parliament much reduced in length and equally increased in perspicuity. By comparing the two or three lines in which we have above described the liquids that shall be held

to be polluting, with the page devoted to the same object in the Bill, it will become clear that verbiage may be yet diminished. We shall return to some objections to the Bill as it stands, but meanwhile we thank the framers of the measure, Mr. Stansfeld, Mr. Secretary Bruce, and Mr. Hibbert, for the stride which they have made towards a legislation that shall be intelligible to plain men, without the interpretations of a lawyer.

The provisions of the Bill have been taken, almost entirely, from the Second Report of the Royal Sanitary Commission appointed in 1869. It will be seen that the Public Health Bill is, in the main, a great engineering measure. While the medical element must always retain great importance, the works of all kinds that will be necessitated by the provisions of the Bill can only be successful if carried out by competent engineering skill, and if duly designed as a portion of that great reform in the water supply, irrigation, drainage, and agricultural engineering of the kingdom which, as we have often pointed out, might in so short a time treble the products of the soil, and occupy all available labour.

ON JAPANESE ART.*

Enamels.

Of all the arts of the Japanese the one which is to my mind the most interesting is that of enamelling. In this they excel beyond any other nation with whose works we are acquainted.

It is only within the last few years that examples of Japanese enamelling have reached this country, and I am led to believe that it is only very recently that they have been allowed to be exported from Japan. Neither the large collection of Japanese curiosities preserved at the Hague, nor Siebold's Museum at Leyden, contains a single specimen of this art.

The few statements I have been able to obtain from those who have resided in the country, or who are living there at the present time, as well as from Japanese gentlemen themselves, are so vague and conflicting that, put together, the result is *nil*. My own idea is that none are now deg, and that the art has always been dedi- shi to the production of articles of use and ment for the palaces of the Mikado and the nces of the land.

The recent alterations in connexion with the overnment of Japan, and the breaking up of a arge proportion of the Daimios' establishments, onsequent upon the decrease of their power nd revenues, may account for the sudden ex- orta ion of so many valuable works of art from is country. Be this as it may, we have become e lucky ossessors of works of great beauty l valu, as well as of lasting interest to all e art-lovers.

A carefu examination of the Japanese mels almost bewilders the mind, and con- s the eye; on the one hand by the almost erhuman skill displayed in their manipulation, on the other by the marvellous diversity, icacy, and beauty of their designs.

The ancient examples of the art of Cloisonné ich have come down to our time from the dle Ages are almost entirely in the form of ll plaques, which were used for the orna- ntation of ecclesiastical vessels, book-covers, r-frontals, and the like. In the interesting k by the monk Theophilus, on the "Arts of e Middle Ages," we find an elaborate descrip- n of the manner of constructing small aques of this enamel for the enrichment of urch vessels; but no hint is given as to its ic ion for the complete surfaces of the vessels emselves. Theophilus appears only to have en acquainted with pieces which could be held tween the thumb and finger, and polished like, e natural gems with which they were usually sociated on the golden vessels. What would e have said if he had seen the works of the panese in vases nearly 3 ft. high, and dishes ft. in diameter, entirely enamelled (on both es in the case of the dishes), with designs re minute and accurate than any he ever saw the church plate of his day,—the culminating ch of the arts of the Middle Ages?

Japanese enamels are characterised by great riety of colouring, bright colours being aringly used. In this respect they differ from e Chinese, in which the brightest possible lours are introduced throughout. The prin- pal colour in Japanese enamels is a dark green, and is adopted generally as the ground tint. Other colours, such as lilac, drab, and dark blue, are frequently employed for the grounds of the variously-shaped medallions introduced in the designs.

In almost all instances which have come under my notice, the green ground is ornamented with a delicate spray and leaf work, with small flowers studded throughout it; the leaves are in various colours, including drab, light green, and white. Medallions of different sizes, formed when small of various geometrical designs, and when large of devices derived from animal and vegetable life, occur at intervals, sometimes symmetrically placed and sometimes erratically disposed. Along with these medallions, pieces of diaper work, of both regular and irregular shapes, are introduced with the most happy result. Sometimes a wonderful degree of care and skill is observable in their manipulation, especially when the design is of a small repeating geometrical figure; for instance, in a diaper, most difficult to put together, I counted no less than 103 separate squares of wire in the quarter of a medallion of only 1¼ in. radius. You must remember that each of these squares had to be shaped out of the fine ribbon-wire, and soldered one by one to the ground of the article.

Of the designs of the conventional flowers, rosettes, and scroll-work, found on every piece of enamel, it is impossible to speak too highly, and their colouring is invariably harmonious and effective.

On large specimens of the art, the dragon is perhaps more frequently depicted than any other object, and it is invariably handled in a most masterly manner. The *Foo* is another favourite representation, and is commonly shown in the act of descending from its lofty home towards earth, with its numerous long and richly-coloured tail feathers floating around it in graceful curves. In this shape, the sacred bird is certainly one of the most artistic conceptions of the Japanese artist.

The material, which for its proper display requires to be cut up by the metal lines into minute divisions and distinct forms, is highly favourable for depicting birds, fish, foliage, flowers, and all descriptions of purely ornamental figures; but is, on the other hand, incapable of rendering landscapes or any scenes requiring perspective. It is simply impossible to convey any idea of distance in the material. I have seen a landscape attempted on a Japanese dish, but the result was of the most archaic character, and a total failure.

Lacquer Work.

I am truly at a loss where to begin my remarks on the lacquer-work of the Japanese, and I am afraid I shall experience considerable difficulty in knowing where to end.

The styles and modes of manufacturing and ornamenting it are apparently countless. I have endeavoured to classify the several descriptions which show some signs of resemblance, but have been compelled to give up the task as hopeless. There is no art-manufacture, I believe, which displays such a diversity of treatment as this.

In a single cabinet, which formed one of the gems of the Japanese Court in the Paris Exhibition of 1867, and which now ornaments the collection of Mr. James L. Bowes, there are no less than nine distinct species of lacquer, and twenty-four different modes of artistic treatment represented on the main divisions, such as drawers, doors, and the like. On a more minute inspection, we find on one drawer sixteen different modes of applying and decorating gold-work, and on another seven ways of treating various metals; all the remaining drawers, along with the doors, present numerous interesting methods of handling the coloured and aventurine lacs, and the metal, shell, and other inlays. This work, taken altogether, is certainly an extreme illustration; it was made, I understand, for the purpose of showing, in a single article, the most important modes of lacquer-working followed by the Japanese of the present day; and, notwithstanding the great variety it displays, its general effect is superb. It is richly mounted with silver; and the key-drawer is faced with an engraved plate of that metal, edged with gold, and barred with a broad line of some black metal.

It is rarely that one meets with more than two kinds of lacquer on one article, but the artistic treatment of any one kind may vary considerably.

It is a well-known fact that Japanese artists avoid, if not positively dislike, diametrical division. This you will see most satisfactorily illustrated on the sides, ends, and top of a cabinet before you. On all these surfaces a piece of fret diaper is introduced, but nowhere dividing them diametrically or into regular forms. The diaper is not constructed, as we should certainly do it, at the angle of 45°; and, what may strike us as more peculiar, its margin lines are not at the same angles as the pattern, or even similar to each other, one being straight and the other zig-zag. Here, then, we have all *our* ideas of propriety in ornamentation broken through, yet who can deny that the result is satisfactory?

The Japanese frequently use diapers to cover surfaces entirely, in the manner common with us, but they never consider it necessary to border them round, but let them crop out just as they may.

So much for ornamentation by means of diapering; I shall now draw your attention to the Japanese method of introducing medallions in their art-works. When two or more medallions are introduced, containing any kind of enrichment, they are almost always of different outlines, the love for variety preventing the artist repeating his forms. Referring to the cabinet, we find twelve medallions and six different outlines used; and out of the total number eight are complete, and four are broken medallions, the latter being cut into by the panels of the doors and main drawer.

The back, ends, and top have two medallions each, of different forms, one being placed on the black ground, and the other breaking into the fret diaper-work, in the most free-and-easy manner imaginable. The artist here contrived, by coupling differently-shaped medallions, by disposing them in different positions, and by cutting the ground in a different way with the fret diaper, to make every surface of the cabinet a distinct and independent design; yet combined they produce a most consistent whole.

I have been led to enlarge on this subject because it involves art-principles which we should do well to carefully consider; and, because, on the other hand, it supplies a key to much that may appear strange to the observer who examines works of Japanese art for the first time.

Nothing can surpass the delicacy and beauty of finish observable in the old lacquer-work, now unfortunately rarely to be met with, and one cannot but wonder at the loving care and marvellous skill displayed in it. Some of the small articles, such as medicine-boxes, come as near perfection, to my mind, as anything done by the hand of man; and larger works, though not demanding so much delicacy, are still remarkable for their manipulation.

Of the mode of manufacturing lacquer-work very little appears to be known in this part of the world, but what little is known I shall briefly detail to you.

The lacquer or varnish in its original state is the produce of a shrub called by the natives *oerosino-ki*, that is, varnish-plant. The product of the shrub requires to be prepared with great care, and the colouring materials have to be incorporated with it by a tedious process of grinding. The colours most commonly used are black, scarlet, dark green, crimson-red, and brown. Black is more generally adopted for the ground-work of lacquered articles than any other colour; scarlet is principally used for the interior of boxes, and sometimes as the ground-work of trays and similar things. Perhaps the most beautiful of all the lacquers used for grounds are those called by us aventurine, from their likeness to aventurine glass made in Venice; there are several kinds of this, some closely resembling the glass, and others of a more dispersed nature, with flakes more like coloured mother-of-pearl than metal.

In laying on the varnish, five or six coats are applied, one after another, each coat having been allowed to dry before the next is laid on. When a sufficient time has passed to secure the perfect drying of the whole, the surface is ground down and polished. In many instances squares of gold and silver, pieces of pearl, ivory, coral, and such like are inlaid, as it were, into the lac surface; this is done by fixing them with the first coat of varnish, and then filling up to their thickness with many successive layers, and ultimately grinding the whole to an even surface.

The process, so far as I have described it, is used in the preparation of grounds only; when the beautiful relief ornamentation is to be applied, much more complicated and tedious

* By Mr. George A. Audsley. See p. 202, *ante*.

manipulation has to be gone through. I have been told, by those who have resided in Japan, that many months, and even years, are required to produce a highly-raised piece of lac. Lacquer-work is prized, in the first place, in proportion to its delicate finish, and in the second, in proportion to the degree of relief given to its ornamentation. In the writing-case before you, which was exhibited at Paris in 1867, you will observe how very beautifully the designs, both outside and inside, are rendered in relief, with the lights put in with squares of polished metal, and the red berries, growing on the rock plants, represented by raised beads of coral.

There can be no question that the process of raised lac working is one of the most tedious nature, and it is evident that careful cutting and grinding are required, to bring the rough masses of varnish into their proper forms before the final gilding is attempted. As regards the gilding, I know nothing, and can get no correct information. It is on the surface of the lac; but whether it is laid on in leaf, or powder dusted on a wet coat of varnish, I am unable to decide. When of good quality, it stands rough usage, washing, and polishing.

The practice of enriching lacquer by applying other materials, such as the various coloured metals, tortoise-shell, mother-of-pearl, coral, and precious stones, is very usually followed in good work. The small vase brought for your inspection is a most characteristic example of this practice. The general body is of raised gold lac; the flowers of the iris are in white and purple pearl; the chrysanthemum flowers are in white pearl, with yellow centres and green calyxes; and the *Oumai* blossoms and buds are in white and red coral. All these flowers and buds are exquisitely carved and engraved.

As another instance of this class of work, I may describe a picture on the top of a modern Japanese box, which I had the pleasure of examining the other day. It comprised two figures of men, one of which was on horseback. The faces and hands of both were in ivory, carved in high relief; their sword-handles and guards were in ivory and purple pearl; and the silk tassels of the horse's trappings were in white pearl. The remainder of the picture was in various-coloured lacquer, and the whole beautifully rendered.

Porcelain.

To my mind, the most beautiful and artistic of all the fictile wares of Japan is the Satsuma; and I consider it superior, in an art point of view, to anything produced by other countries. This is made in the province of Satsuma, situated in the south-west of the island of Kiusiu. The body of the ware is of a delicate cream or vellum tint, and is covered with a thick transparent glaze, which is in nearly all cases crackled. On this softly-toned ground, figures, birds, flowers, and conventional designs are painted in the most exquisite manner imaginable. The freedom and grace infused into every line of the flower and bird subjects are astonishing; while the colouring is soft and refined to a degree.

In my remarks on lacquer-work I drew your attention to the fact that the Japanese artists dislike diametrical division. I have here a piece of Satsuma ware which is a still better illustration. It is a small basin, on which are painted two medallions, one filled with flowers, and the other with ornamental patterns. Looking at the basin, on the outside, neither of the medallions is seen to be complete: the one with flowers, placed on the lower part, is almost, one-third cut away by the stand of the bottom; and the other, placed on the upper part, is cut in half by the rim. On the outside of the basin, therefore, we find no trace of the symmetrical arrangement or balance of any sort; and on the inside we find the same love for irregularity displayed, for all we discover there is the remaining portion of the upper medallion cleverly doubled over the rim. How quaint all this is; and, on careful examination, how lovely,—as free as Nature herself, yet satisfying all the requirements of decorative art.

Another beautiful ware, richly ornamented with red and gold, is made in Japan, I am informed, in the district belonging to the Prince of Kanga; but of this I am not at all certain. The ornamentation of this ware is infinitely more minute and laboured than that of Satsuma, but is far inferior to it in artistic excellence. Kanga ware appears to be held in great estimation in Japan, no doubt on account of its fine colour and intricate ornamentation.

The Japanese frequently lacquer articles of porcelain, sometimes entirely and sometimes partially. When entirely covered, they are treated, as regards their decoration, in a similar manner to ordinary lacquer-work; when only partially covered, two methods are adopted. The first method consists in grounding in with lac all portions of the object excepting those which have been already decorated, and intended to remain in their original state; and the second method consists in taking the porcelain itself as the ground, and ornamenting it with raised designs in gold and coloured lacs.

Metal Work.

The Japanese are very skilful in all that relates to the artistic treatment of the metals, and produce works in this branch of art as commendable as they are varied. They are expert in casting, carving, damascening, engraving, inlaying, weaving, and tempering; and in many of these departments, produce specimens comparable to anything done in Europe.

Perhaps the most characteristic of all their metallurgic works is that called by them *syakfdo*. In this, numerous metals and alloys are associated, the designs being produced in colours, through the agency of the various coloured metals,—white being represented by silver, yellow by gold, black by platina, all shades of dull red by copper and its alloys, brown by bronze, and blue by steel. Gold, silver, and polished steel, of course, represent themselves in designs as well as abstract colours. A red garment, embroidered with gold, and clasped with silver, would be executed in red-coloured copper, inlaid with gold, and furnished with a silver brooch. The sword in the hand of a warrior would be in polished steel, and, if bloody, would have red copper inlaid on it. These instances will suffice to illustrate the general mode of producing coloured designs by the exclusive use of metals. I have seen many beautiful specimens of *syakfdo*, and can bear witness to their faultless execution.

The Japanese have brought bronze-casting to great perfection, as is proved by the superb incense-burner which was presented to his Royal Highness the Duke of Edinburgh by the Mikado, and is now exhibited in the South Kensington Museum. They also produce a highly-finished and polished bronze-work, on which the relief ornamentation is produced by cutting the surrounding metal away. The relieved objects are then engraved, and richly damascened with gold and silver. Bell-founding is carried on to a considerable extent, and art is never neglected in the designs.

Repoussé-work is well known to the Japanese metallurgists, but is not so largely adopted by them as it is by Western artists.

Flat silver wire, woven into diaper patterns, is a favourite material for covering uniform surfaces, and is frequently applied by the Japanese artists in an effective manner.

Lastly, I desire to draw your attention to a group of storks, executed in gold, silver, bronze, and other metals. You will agree with me, that the Japanese have been more successful than our silversmiths in appreciating the nature of their materials, and realising the correct modes of working them. Compare this group,—where every feather is a thin plate of metal, carefully engraved; where the legs, tails, necks, and heads of the birds are in their natural colours; where the rock they stand upon is modelled with accuracy, and its stunted vegetation truthfully rendered,—with the best efforts of our silversmiths, as displayed in presentation plate, of which the best that can be said is that they contain many pounds of "solid silver." Compare them, and I am satisfied that you will give the award in favour of the Japanese.

* * * *

Carved Works.

It is a somewhat remarkable fact that in all the varieties of ornamentation applied to such materials as porcelain, textile fabrics, paper, and in pictorial illustrations generally, the Japanese never resort to shadows for the purpose of giving the effect of relief. It is a remarkable fact, because, as a race, their artists are passionately fond of relief in everything, and adopt it everywhere it can be properly used. My last words explain all, they acknowledge the great law in decorative art that *flat surfaces should not appear to be relieved, but be treated as flat surfaces*, and adopt relief only where it can be properly used.

When relief is wanted, the Japanese artist has countless expedients for securing it: in porcelain, he moulds it from the clay, or applies it by lac; in metal-work, he casts it, sculps it, or beats it up; in ivory and wood, he carves it; in lacquer-work, he brings it up by coat after coat of varnish; and in embroidery, he plies thread over thread with patient care until the relief is gained.

Of all the carved work of the Japanese, the most wonderful and interesting are their ivories, called *netszkes*. These consist of groups of figures and animals, grotesque figures, and representations; in short, of nearly every natural object in Japan, most truthfully rendered. It is quite impossible to give any idea in words of the quaint humour, the broad caricature, the intense power of expression, and the general artistic excellence, which stamps every *netszke*, in which the human form appears with an individuality distinct from all kinds of a kindred nature produced in other lands. A first-rate Japanese *netszke* has positively no rival. The carving of these ivories is carried to the highest degree of perfection; and its effect is frequently enhanced by the partial application of colour and gilding.

The Japanese are likewise skilful in wood-carving, and they frequently substitute it for ivory in their small works.

Of the larger and most important labours of the wood-carvers,—such as those applied in the temple and domestic architecture of the country,—I am at present unable to speak. My visit to Japan will, no doubt, put me in a position to tell you something about the native architecture, and the modes adopted for its decoration; and on a future occasion I shall be pleased to give you the result of my observations.

THE BOARD OF PUBLIC WORKS IN IRELAND.

An alteration in the constitution of this Board, which is in contemplation, if not already actually decided on, is exciting a strong feeling of dissatisfaction in the sister kingdom, and involves questions equally important in England as there. For the proper understanding of the matter, some little information is necessary.

The range of business coming within the Architect's Department in Ireland is enormous. The department is presided over by three commissioners, the chairman being an officer of Engineers, Colonel McKerlie, whose interfer[illegible] in the details of the architect's administrat[illegible] leads at times, it is asserted, to some miscarriag[illegible] of business.

The architectural department consists of:—[illegible] architect (800*l.* per annum), assistant dit[illegible] (450*l.*), with a moderate staff of draughtsme[illegible] clerks, three surveyors (at about 300*l.* [illegible] annum), one clerk specially attached to [illegible] architect and surveyor (120*l.*).

The department has to administer in [illegible] matters of building, maintaining, furnishing [illegible] buildings of a public nature (except the military ones) in Ireland, and to transact the busin[illegible] appertaining to Government loans under exist[illegible] Acts of Parliament for farm buildings, labour [illegible] cottages, glebe-houses, &c. The Board of Wo[illegible] is now identical with, or has absorbed into it[illegible] the functions of the Board of Control of *Lu[illegible] Asylums*; also the architect's department of [illegible] *Board of National Education*. Under this h[illegible] the department has the entire work of negotiat[illegible] for sites, building, maintaining, inspecting, [illegible] keeping in repair all model schools, model fa[illegible] and national school-houses over the wh[illegible] country. So with regard to the *Constabul[illegible] Department*: it has a like duty with rega[illegible] to the constabulary barracks, which are spre[illegible] throughout Ireland; *coast-guard stations*, officer[illegible] and coast-guards' houses, the same; a va[illegible] number of miscellaneous public building[illegible] their maintenance and furnishing, to t[illegible] minutest details,—the Castle of Dublin; t[illegible] Vice-regal, Chief Secretary's and Under Secr[illegible] tary's lodges, Phœnix Park, with all the lod[illegible] and rangers' and keepers' houses, &c. (the p[illegible] is under the control of the Board of Works) [illegible] Law Courts, comprising some eight or nine co[illegible] record buildings, solicitors' buildings, &c[illegible] Queen's Colleges, at Galway, Belfast, and [illegible] and College of Maynooth; the post-offices, Custom-[illegible] houses, stamp-offices, Income-tax offices in the larger towns, and a host of public departments,—the Dublin Metropolitan Police-offices, and other buildings which we cannot at present call to mind. The above will be sufficient to show the extent of the work cut out for the architect's department, and the nature of it being such that even a pair of bellows or a poker is not supplied to the Lord Lieutenant's kitchen without the matter passes under the architect's hand, i[illegible]

may be fairly conceded the staff is not an immoderately extensive one.

As respects the present head of the department, Mr. Jas. H. Owen, the president of the Irish Institute of Architects, we believe we are correct in saying that he bears a high reputation for administrative ability, and is popular in the greatest degree with both the public and his subordinates.

Touching the surveyors, who divide Ireland into three districts among them, the peculiar character of their duties should be remembered when estimating the proposed Government scheme. In inspections of the many buildings under their charge, the limited amount of railway communication in Ireland is to be borne in mind. It is still possible, in going from Dublin to inspect some remote coastguard station, to expend *six days* of hard travelling in going and returning. There is no parallel in any English architect's practice for the extraordinary conditions of laborious posting over long distances of fifty, sixty, and seventy miles per day, which fall to the lot of an Irish architect in wide practice.

And now let us see what is proposed.

A commission was sent over on the part of the Treasury last autumn, consisting of the Marquis of Lansdowne, Mr. Herbert Murray, and Captain Crossman, of the Royal Engineers: three gentlemen at that time admittedly, we believe, unacquainted with Ireland or Irish affairs.

It is stated that the first and most essential provision laid down for them,—no matter what they should ascertain the work of the department to be,—was *that on no account was the annual cost of the department to be increased.* A confidential report has been made by these gentlemen, but the nature of the recommendations have leaked out, and are well known. First, they propose to appoint an assistant-commissioner, or director of works, whose sole duty shall be to direct and control the [illegible]tect's department, and that this functionary [illegible] *a captain of Royal Engineers*, at a salary [illegible]r annum! To provide the means [illegible]r this 1,000*l.*, the lower officials are [illegible]d off. The entire of the surveyors' [illegible]e done by two persons, one of whom [illegible] the city of Dublin; the other, the [illegible]reland; (the assistant architect, we [illegible] to be abolished altogether). These [illegible]ors are to do all inspecting, nego[illegible]sites and buildings, write specifica[illegible]ew works, and are to have one [illegible]d to them at home, to copy their [illegible]ations and documents. As neither [illegible]tlemen in the discharge of his duties [illegible] find time to enter his office, and as [illegible]r in charge of all Ireland would be [illegible]live, eat, drink, and sleep in railway-[illegible] and hunting cars, the nature and de[illegible] office-work, and how it is to be [illegible]ng. It is unnecessary to go into [illegible] as to the injustice to the subordi[illegible] object would really seem [illegible] berth for a captain of Royal [illegible] the expense of the salaries of [illegible]ficials docked off. We look in [illegible]n for humiliating the able archi[illegible] the head of the department, and [illegible]siness, and does it thoroughly, by [illegible]er of Engineers as his superior; [illegible] us that we are justified, as well [illegible] the public as of the profession, in [illegible]urnished with a statement of the [illegible]hich this determination has been [illegible] The question might very properly [illegible]e asked [illegible] the House of Commons, and we trust [illegible]his will be done.

THE METROPOLITAN EXTENSION OF THE GREAT EASTERN RAILWAY.

On Saturday last the members of the Civil [illegible] Mechanical Engineers' Society visited the [illegible] the Metropolitan Extension of the Great [illegible] Railway, by permission of Mr. Edward [illegible], the engineer to the company.

[illegible] of the extensions is to shorten [illegible] line at the outskirts of [illegible] by cutting across, under [illegible] near London-fields into [illegible] of going round as at present; and [illegible] same time open up a district at present [illegible] served by any line, running [illegible] North [illegible]. The members first met [illegible] the site of the new station in Liverpool-street, [illegible] adjoining the existing Broad-street Station of the [illegible] Railway.

The new station will be below the level of the ground, and large quantities of earth have been removed by the contractors, Messrs. Lucas & Co. These excavations show a great depth of made soil, the accumulations of centuries, cesspools and sewers being in great abundance. On the west side of the site a heavy retaining wall, somewhat after the style of those at the metropolitan stations, but more ornate, is being erected. In the foundation and backing of this wall such of the old bricks as are sound and whole, from the houses that were taken down, are being re-used, and for hardness they compare favourably with new bricks. The North London Railway being on a viaduct immediately alongside, and, as before mentioned, the new work being below the level of the ground, it has been necessary to underpin the piers of the viaduct, as well as the neighbouring houses, on the east side of the course of the line.

This work, although not presenting a great show, takes a good deal of time and requires great care on the part of the contractors. The heavy traffic running on the viaduct, and the tenderness of some of the concrete underneath the piers, increasing the care necessary in securing a proper foundation. Between Sun-street and Brick-lane, the various bridges and other works were carefully examined. At this point, near Brick-lane, the extension line crosses under the main line of the Great Eastern Railway at an angle of about 30°. The old line is carried on a viaduct, the arches of which are elliptical; these had to be cut away and replaced by girders carried on three massive walls: this work created a good deal of interest amongst the members of the society, the mode in which it was carried out being described by a representative of the contractors, who conducted the members over the works. After passing under the Great Eastern main line, the extension rises by a stiff gradient from under the surface of the ground to Winchester-street, which it crosses over, and the line continues on a viaduct to Hackney Downs, where it runs into a cutting. Beyond the Mile-end Station the works are in a forward condition, and will shortly be opened for traffic.

MANAGEMENT OF THE NEWSPAPER PRESS FUND.

A WRITER in the *Pall Mall Gazette*, signing himself "A Humiliated Journalist," has given so erroneous and injurious an account of the operations of the Newspaper Press Fund, that any one who feels interested, as we do, in the maintenance of an important charity, will desire to aid in setting the matter right. He professes to speak in no spirit of hostility; but the public have not now to be told that mischief is done by want of head as well as want of heart. The writer in this case has either wilfully mis-stated the case or is altogether ignorant of its real facts. Referring to the balance-sheet for the year 1870, he says,—

"I learnt that the total amount in the way of grants was only 152*l.* Yet, on reference to the other side of the sheet, it appears that the donations and subscriptions alone amounted in the twelve months to 851*l.* 11s. 9d., while the interest from investments is set down at 175*l.* 12s. 8d. Of these sums, however, the association has, I see, invested 421*l.* 7s. in Eastern Bengal Railway Stock. But there remains the striking fact that the committee in this one year consumed 551*l.* 6s. 2d., and that out of this expenditure only the above-mentioned sum of 152*l.* reached the unfortunate persons whose distress this society was intended to alleviate. Nor does the balance-sheet leave us in any doubt as to the causes of this extraordinary state of things. It appears that the annual dinner of the association cost 173*l.* 19s. 6d., although the tickets only brought in 66*l.* 1s. Thus the philanthropic diners were apparently provided with a banquet at very little more than one-third of cost price."

Now, what is the truth? In the first place, the committee "consumed" *nothing*, being an unpaid body; but if by this expression the "Humiliated Journalist" means to refer to the amount they allowed to be expended in the management of the Society, the sum should be not 551*l.* 6s. 2d., but 291*l.*, including the secretary's salary and a gratuity, 112*l.*, rent of office 42*l.*, stationery, postage, and so on. He shows that only 152*l.* were given away, and goes on to explain the cause of "this extraordinary state of things" by pointing out that, while the dinner cost 173*l.*, "the tickets only brought in 66*l.*" Objectors of this class, even when honest, forget the fact that in the infancy of a society the chief aim and cause of expense are the collection of money and the establishment of a fund to assure the permanence of the Institution. A dinner is in our days, whether rightly or wrongly, the means adopted: men of eminence are invited, and they, in lieu of paying for it, ordinarily present donations far exceeding the cost of the dinner. The correct statement as to the precise dinner in question would stand thus:—

By cost of annual dinner, and postages in relation thereto		£174	0 0
Received:—Donations at the dinner	£617 0 0		
" For dinner-tickets	66 0 0		
		683	0 0
Gain by the dinner		£509	0 0

Of this and other receipts 400*l.* were invested, 152*l.* were voted to distressed members, and 100*l.* remained at the banker's. The assertion of the writer that the philanthropic diners were provided with a banquet at little more than one-third of the cost price shows entire ignorance, or something much worse.

The sum voted to applicants seems small; but it may have been all that was necessary during that year, at which time only members of the fund could obtain relief. Since then, the Society, recognising the great assistance they were receiving from the outside public, have altered the rule, so as to allow the committee to relieve extreme cases of destitution on the part of deserving members of the press not contributors to the fund, their widows and orphans. The grants last year, partly in consequence of that change, amounted to 403*l.*

We repeat that the expenditure in the office of such a society must be viewed, not alone with reference to the sum distributed, but the sum collected; and in the case of the Newspaper Press Fund, it must not be forgotten that a permanent fund, amounting to 6,200*l.*, has been created available for the purposes of the charity. We shall by and by be glad to see its doors opened still wider, and have little doubt that this will gradually take place. We will only add that, after a careful examination, we feel tolerably well assured that, so far as the Newspaper Press Fund is concerned, the "journalist" who wrote in the *Pall Mall Gazette* has no occasion to feel "humiliated," except on the reflection that he has done very great injustice to what promises to be a valuable and important institution.

SCHOOL BOARDS.

Liverpool.—At a recent meeting of the Liverpool School Board, Mr. Stitt said that the school organisation and management committee had given serious consideration to the question as to the kind of schools to be erected by the Board. The same matter had occupied the attention of the London School Board, who had issued an elaborate report pointing out what they thought should be the character of the buildings. Mr. Robson, the architect of the London School Board, had had the report under consideration, and was preparing instructions upon it to architects. The organisation and management committee had asked for a copy of those instructions, and it had arrived that morning, so that no time would be lost in the matter.

Coventry.—The first premiums for school plans having been awarded to Messrs. Parsons & Ellwood (motto, "Modus Operandi"); and the second to Messrs. C. Henman & W. Harrison, of Newcastle-upon-Tyne (motto, "System"), Messrs. Parsons & Ellwood wrote to the clerk stating that with reference to the terms upon which they should be disposed to carry out their design, they would be prepared to make the necessary working drawings, draw out the specifications, and procure the estimate, at a commission of 1½ per cent., and to superintend the erection of the buildings at a like percentage, making in all 3 per cent. upon the accepted tender. Messrs. Henman & Harrison said:—

"We hope that, should you decide to build schools from our designs, we may be entrusted with the preparation of the necessary working drawings and specifications for carrying the same into execution. We beg to point out (and we feel sure that you will agree with us) that the premium will not adequately remunerate us for preparing the drawings which you have chosen. It was in the hope of getting the superintendence of the buildings which induced us to prepare and submit them."

It was resolved, after some consideration, that Messrs. Parsons & Ellwood's offer be accepted, and that one of those gentlemen be requested to call upon the Board.

Ipswich.—At a recent meeting of this Board, some conversation took place on the subject of inviting competition for plans, and the chairman drew up an advertisement, which it was agreed should be inserted in the *Suffolk Chronicle* and *Ipswich Journal*, and that a copy of the advertisement should be sent to all the architects resident in the town within the knowledge of the Board. The Sites Committee for St. Margaret's

and St. Helen's District reported that, acting under the instructions of the Board, they had agreed to purchase nine allotments in the Argyll Estate, Woodbridge-road, covering an area of 49 rods 85 ft., for 425*l*. It was then mentioned that it was proposed that the schools built here should accommodate 250 boys, 200 girls, and 200 infants. It was agreed that the report should be received and adopted, and referred to the committee to complete the purchase. Some conversation took place as to whether the Board should wait till they had received plans for the Stoke Schools before they invited plans for these, but it was decided to advertise at once for plans. Mr. Fraser raised the point, as he had done with reference to the Stoke schools, of lighting the school buildings from the north; and after some conversation, in which Dr. Chevallier and Mr. Grimwade expressed their disapproval of a room which the sunshine never entered, it was decided that a suggestion should be made in the advertisement that architects should give their attention to the expediency of lighting from the roof facing the north.

Bridgwater.—The School Board have received tenders for the proposed new schools at Eastover from builders who had been invited to furnish them. The highest estimate amounted to 2,500*l*., the next figure was 1,700*l*., and the other estimates amounted to 1,580*l*., 1,350*l*., 1,320*l*., and 1,290*l*. respectively. The plans were examined in detail, but the consideration of them was adjourned.

THE CONSTRUCTION OF BANKS FOR CANALS OR TANKS.

THE INSTITUTION OF CIVIL ENGINEERS.

ON March 12th, the paper read was "On the Soonkêsala Canal of the Madras Irrigation and Canal Company," by Mr. J. H. Latham.

The object of this communication was to give a general description of the canal between Soonkêsala and Cuddapah, recently constructed for irrigation and navigation by the Madras Irrigation and Canal Company; and to direct particular attention to the mode of safely constructing high banks for canals or tanks, illustrated by that work.

It was remarked that the countries possessing the greatest powers of production were those in which the yearly rainfall was concentrated into a few months. Settled warm weather was the safest for crops at every stage of their sprouting growth, and ripening; and, not only in England but in India, it was found that crops grown during uncertain weather, as all unirrigated crops must be, were nearly as often and as severely injured by rains or floods as by drought. To fully develope the productive powers of land, three things were needed:—1st, settled weather, which art could not give nor control; 2nd, irrigation, which must be controlled by art; and, lastly, manure.

Of the native engineering works in the Madras Presidency those for the application of water to irrigate fields and gardens ranked the first, both in magnitude and importance. Of these there were three kinds, viz.—wells, tanks or reservoirs, and river channels. Of the latter full details were given, and it was remarked that, while the rebuilding of the Nellore anicut, since it was last carried away, was making progress, the Toombuddra project, of which the Soonkêsala canal was a portion, was adopted by the Government. This was designed to serve two purposes; first, the continuous irrigation throughout the year of three large areas, of which the principal lay in the Bellâry district, the next in the Koondêr Valley, and the other in the Nellore district. The second purpose, apparently necessary to the success of the first, was a means of communication by canals, by which the produce of those areas could be sent to a market more cheaply than by cart or railway, more expeditiously than by cart, and more securely than by railway.

The canal began at Soonkêsala, with a weir across the river Toombuddra, 1,500 yards in total length of clear overfall, which was broken into two lengths by an intervening island. The weir stood upon the rocky river-bed, and was formed of three patterns, viz.—(1st) of solid rubble masonry of gneiss, trap, and quartzite boulders; (2nd) of gravel concrete, with gneiss rubble facing in front and rear; (3rd) all recent portions were of solid gneiss rubble masonry, with a facing on the lower side of Kurnool limestone ashlar, which averaged ¾ yard thick where exposed to concussion. Patterns Nos. 1 and 2 had a front and rear batter of 1 in 8; while No. 3 had an upper batter of 1 in 4, and rear face vertical. All were 8 ft. broad at the top, and coped with dressed limestones 1 ft. thick. The mortar throughout was of Kurnool kunkur, except the joints of the coping, which were of Portland cement. The coping was joggled wherever the anicut (which was not straight, but followed the line of highest solid rock) was concave in plan on the upstream side. No part of the anicut formed on any of the above patterns, either with or without the coping, had ever failed. The height varied from 6 ft. to 26 ft., and averaged about 18 ft.; and the highest registered flood rose 7½ ft. over the crest.

Though the masonry works, and especially the weirs, contained a great variety of work, the chief interest and novelty in the construction of the canal was undoubtedly the mode of forming the banks. These ranged up to a height of 50 ft. from the ground surface of their site to the water-line. In all cases single banks were reveted or shingled on the inner slopes. The formation of the banks was various, comprising lengths of simple filling, of masonry wall, of masonry face-wall, of masonry revetment, of puddled bank, and of puddle-core bank, in different sections of the canal. The masonry wall, masonry revetment, and puddle-core bank came into the author's hands in 1865, as finished works; but had since been strengthened or raised. The strongest and best sections were the masonry face wall and the puddled bank, adopted after the experience of two seasons in the working of all kinds. The author estimated the efficiency of these as so equal, that the choice between them might be a question of cost. The only objection to the face-wall was, that it could not be easily raised when once built. No portion of this face-wall had cracked, or shown any signs of weakness; nor, though unprotected in front by either plaster or puddle, was the leakage more than just sensible. The puddled slopes were even tighter than the face-wall, and had proved efficient even when the bank was of the worst kind of white and grey clay, mixed with salts of lime and soda, and such as to absorb water readily.

Some remarks were then offered as to the probable stability of a bank, composed of any soil thrown up without either selection or puddling, when first exposed to water; and the mode of meeting the two dangers, of slips and leaks, to which a bank was exposed, was described. The consideration of the problem, how to construct earthen dams, of a great height, which could neither slip nor be cut up by leaks, was discussed at some length; and it was remarked that, in practice, the best position for the puddle was on the flattest slope in front of the bank, where it should be protected by rubble, the larger and smoother the better, laid on sharp loose gravel impervious to vermin. The thickness of this protection must be so great, that it could not be wholly removed as the bank settled. Rubble packed, or very rough stone, as kunkur, was best avoided, as it would not follow the bank during settlement. The puddle would be the most dense part of the banks. Where used by the author, the surface of puddle under construction was always kept flooded, like a rice-field; and gangs of men, with their arms linked together, walked backwards and forwards on short lengths of it all day, treading it stiff, as layer after layer was added by the contractor's workmen. In order to insure the puddle remaining water-tight under all circumstances of original settlement, and of alternate wet and drought, it was desirable that it should rest on a substance rather more compressible than itself. To lay it at once on ordinary rammed filling would be too violent a change, and it had always been laid by the author on a cushion of earth, moistened and rammed; each layer, of 6 in. or so, being well wetted, and then sprinkled with enough dry earth to prevent it sticking to the rammer, when punned with a rammer of 40 lb. weight. The rest of the front slope, if not already existing, had been made of earth rammed dry in the usual way; since it was found safest, indeed almost necessary, to establish the broad rule, that nothing but earth should be brought to the front of the centre line of the bank. The bank was then completed of any gravel or bad soil available, the gravel being kept at the bottom as much as possible, and the finest soil to the centre. Though such banks were not theoretically perfect, they had never failed, nor given trouble upon letting the water against them. The lengths entirely constructed on these rules were insignificant, but about five miles of old bank had been faced with puddle laid on earth rammed moist.

HIGHBURY STATION.

A CONSIDERABLE amount of terra-cotta has been used at the new station of the North London Railway Co. at Highbury, now nearly completed from the designs of Mr. Horne. It was supplied by the Watcombe Terra Cotta Co., and is in the shape of medallions, small columns, and an elaborate frieze round the whole of the building, very well executed. The colour, red, contrasts at present somewhat strongly with the stonework of the rest of the façades, but a short time will bring these more into accord. The building includes the well-known "Cock" tavern, and will cost, we learn, about 17,000*l*. The booking-office, which is of considerable size, has a panelled wood ceiling. Messrs. Wicks, Bangs, & Co. are the contractors, and the stone carving has been well executed by Messrs. Farmer & Brindley.

CANDELABRA FOR KING'S COLLEGE CHAPEL, CAMBRIDGE.

UNDER the direction of Mr. G. G. Scott, jun., M.A., architect, Mr. Barkentin, goldsmith, has just now completed two brass candelabra for King's College Chapel, of unusual size. They are 13 ft. in height, are supported on lions, and stand upon plinths of black marble. Each standard carries in the centre one great taper, 5 ft. in height, and six smaller ones around, on (vine) branches. A small shield on each standard admits some work in enamel. The style adopted is that of the period of the chapel, but it is, to a certain extent, German in feeling rather than English. The work has been executed, with praiseworthy care, at the cost of 550*l*.

ST. HELEN'S TOWN HALL COM[illegible] the [illegible]

SIX competitors have sent in se[illegible]ous[illegible]s, respectively marked "Truth 1," "[illegible]om[illegible]," "Respice Finem," "Justice," "T[illegible] oVia Est," "Utility," and with a device of [illegible] circles. A local correspondent points to the last-named as much superior in internal arrangement to the others. The majority have ill-lighted corridors, and are deficient in the means of entrance and departure.

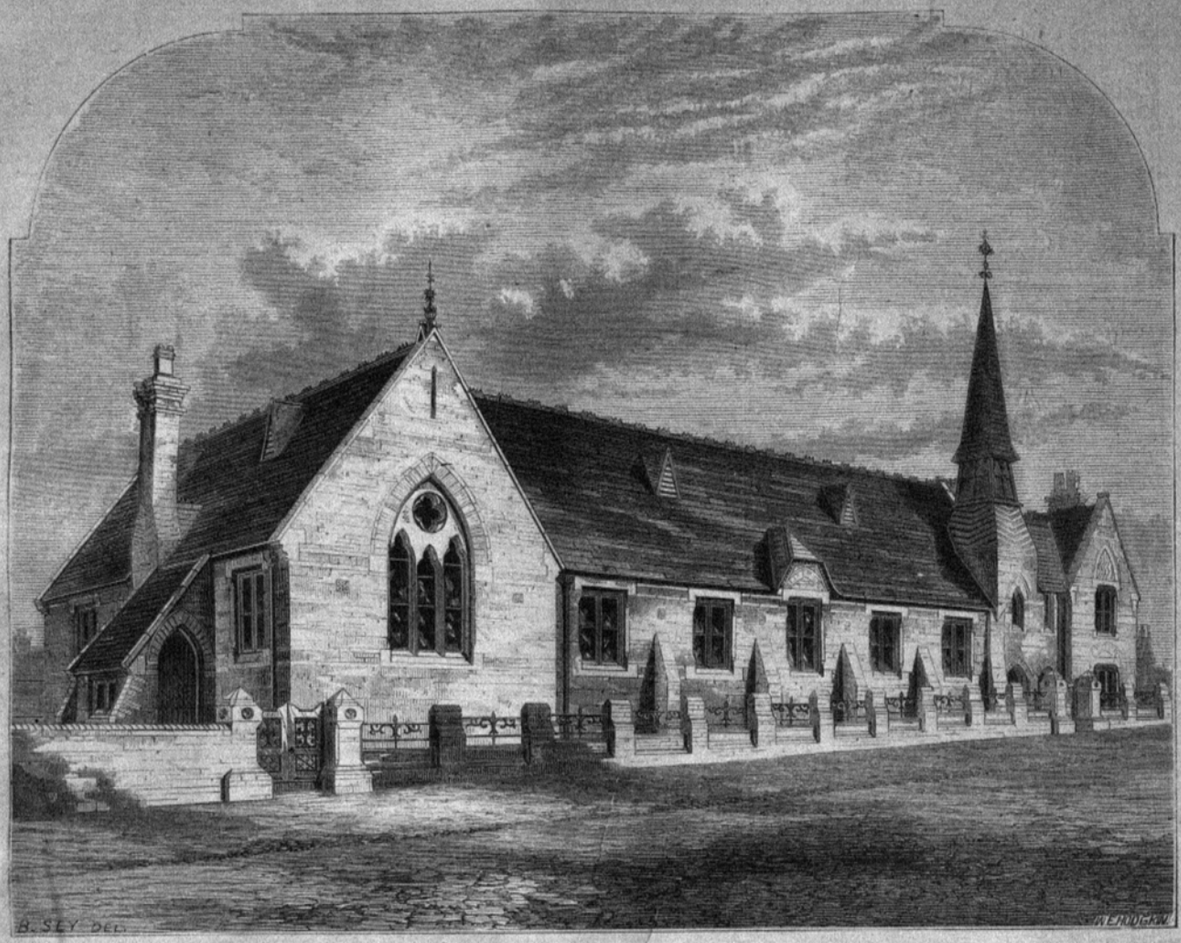
PAINT IN LONDON.

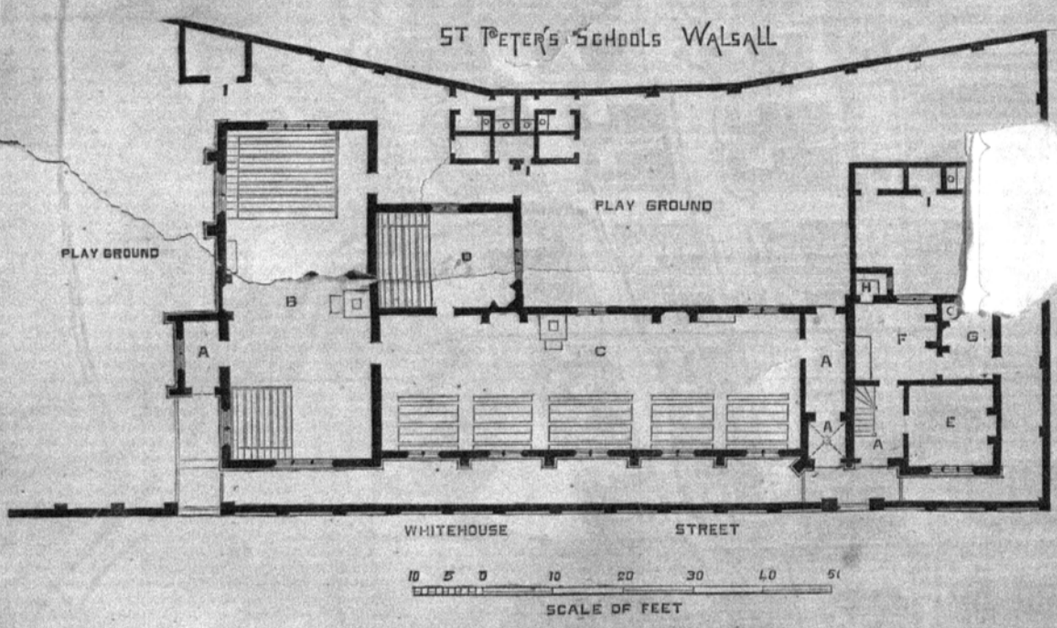
SIR,—Will some of your corresp[illegible]ent[illegible] explain the cause of the light-coloured paint wo[illegible]ndon during the past few years after two years' we[illegible]g in places dark grey, with a metallic appearance [illegible]own opinion favours the belief that it arises from in[illegible]hite lead.

[illegible]TTER.

THE WORKS AT PUTNE[illegible] BRIDGE.

THE Thames Conservancy [illegible] Commissioners having called the attention of th[illegible] proprietors to the obstruction caused to the na[illegible]vigation of the river by this bridge, it was ar[illegible]anged that application should be made to [illegible] Parliament for powers to alter and amend the [illegible]structure so as to afford increased width and [illegible] height to the waterway. These powers were obtained in 1870, and designs were at once prepared; the work has since been carried out, and is now, with unimportant exceptions, complet[illegible]ed. The alteration comprises the removal of s[illegible]everal of the old piers, and sinking in lieu of them two pairs of cast-iron cylinders, 5 ft. 6 in. diameter, with granite caps supporting wrought-iron trellis girders, with a clear span of 70 ft., and two side openings, giving a total waterway in the middle of 138 ft., and an additional [illegible] height in the centre of 3 ft. 6 in. The roadway is formed with a concrete of broken granite b[illegible]edded in asphalte, supported on buckled plates riveted to the cross girders. The traffic over the bridge was never suspended, a temporary roadway having been formed whilst the cross girders were being fixed. This has now been removed, and the permanent roadway is open for carriages and foot passengers. The works have been ably carried out by Mr. Walter Scott, of Newcastle, aided by Mr. John Nicholl, under the superintendence of Messrs. Vadmore & Baker, of Great St. Helen's in conjunction with Mr. John Mair, C.E., of Newcastle.

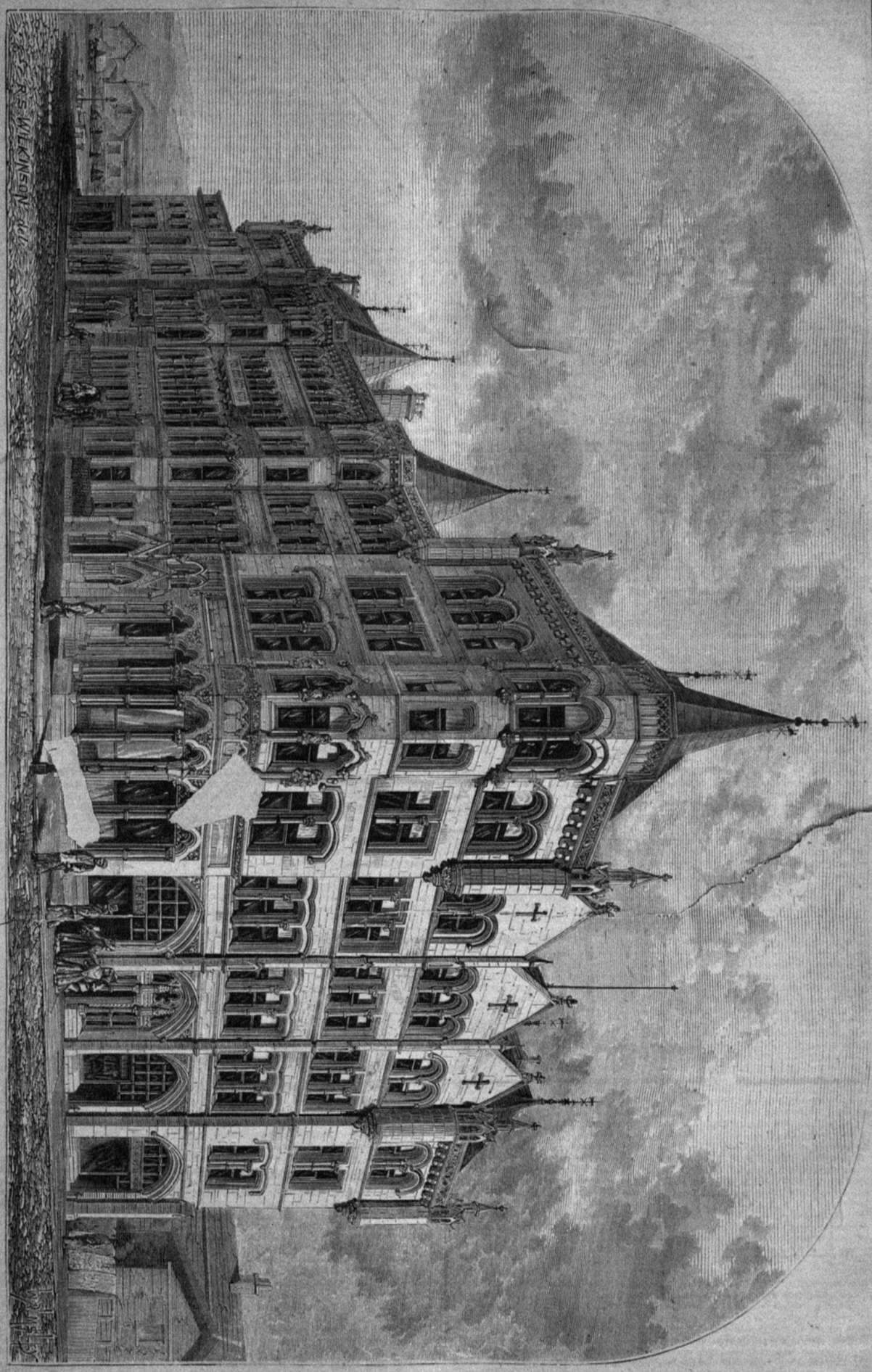




A. Porches and Lavatories.
B. Infants' School.
C. Girls' School.
D. Class-room.
E. Parlour.
F. Kitchen.
G. Scullery.
H. Pantry.
I. Out-offices.

ST. PETER'S NEW SCHOOLS, WALSALL.——Mr. R. Chamberlain, Architect.

These schools, recently erected, occupy a commanding position, and have a pleasing appearance. They will accommodate 270 girls and infants; they are built of red bricks, with blue brick bands, and Hollington stone dressings. The roofs are open-timbered and covered with slates, and provision is made for ventilation. The total cost exceeded 1,300*l*. Mr. Adkins was the builder; the stonemason's work was done by Mr. Hanks; Mr. Kendrick was manager in charge; and the architect was Mr. R. Chamberlain,—all of Walsall.



NEW ESTATE OFFICE BUILDINGS, HUDDERSFIELD.—Mr. W. H. Crossland, Architect.

NEW ESTATE OFFICE BUILDINGS, HUDDERSFIELD.

OUR engraving represents a new block of buildings just completed for Sir John W. Ramsden, bart. In the central portion towards Railway-street are placed the Ramsden Estate Offices. The Westgate front over shops is wholly occupied by the Huddersfield Club, which, together with the central shop (converted into the Club vestibule and entrance-hall), is fitted up in an elaborate manner.

The remainder of the building is used as offices and warehouses, and the cost of the whole is about 35,000*l*. The work has been executed principally by local contractors, from the designs of Mr. W. H. Crossland, of London, who is also the architect for another large block of buildings adjoining, and now in course of erection.

A WORKMAN'S COGITATIONS ON DOMES.

THIS is a vexed subject, I must admit, and I have often kept myself awake half the night in striving to think out some new and practical plan of dome construction.

The result, I am sorry to say, has not been a success. I have seen in my experience some very fine domes in appearance, constructed with great ingenuity, but every one of them looked better at a distance than near. Some were of timber and brick, some were partly of stone, and others of the three combined. I have long since got into my head that a cupola is not a *bonâ fide* dome, no matter what the Italian may be for it;* and I also believe that a man may construct a very good cupola and a very bad dome.

Some considerable analytical formulæ have been given from time to time in the *Builder*, by architects and mathematical scholars, rather beyond my powers of working, or those of the class in whose interest I speak; but, sufficient for me to understand what the writers aimed at.

After all, I must say that true dome construction is hardly universal yet in this country, and true domes are not constructed from the mechanical and other difficulties attendant. Some of these difficulties arise from lack of technical education, others from the material, and not the least is in matter of experience, and the fear that if the big baby were left alone, its "understandings" would not be able to support its weighty body. There are but few of us who have not in the course of our lives witnessed unwieldy little children with bow-legs: well, like these poor little ones, so are most of our domes, for both have generally the "rickets." None but those architecturally informed, or belonging to the building profession, are aware of the many expedients that have been adopted in former days, and in recent times, to keep domes from collapsing; in fact, dropping in, or dropping down, like a house of cards. As the bow-legged child is bound, braced, and bandaged with "splints," so are many of our domes by a variety of contrivances not necessary to mention in a particular manner.

This is not at all cheering at this age of the world. I hope some members of the Institute of Architects will give us proper "lines," that our craftsmen may be able to put the "baby" firmly on its feet, and so that it may stand alone a thing of strength and proportion, and a thing of beauty.

Without running too cursorily over the subject, I take note that the theory of the equilibrium of domes has been said to be somewhat similar to that of the equilibrium of arches; but I have never sufficiently mastered the whole of the laws of the divergence; nor has it been made manifest to me where this divergence begins and ends. I have been told to consider this, and also about planes passing perpendicularly through an axis at a small angle to each other,—say, for shortness, a series of balanced arches,—connected at the crown, each of which would preserve its equilibrium if standing alone (but, in sooth, would not as at present constructed). Is the equilibrium in the dome really maintained by having the weight of each upper part of each series of companion arches or supposed arches greater than what would be required to preserve the equilibrium of a balanced arch standing by itself? Viewing the circular courses of the stone, and taking them as voussoirs, do the whole series exert a uniform lateral pressure on those on either side of it, and is their tendency to fall inwards, exactly of the same nature as the tendency of the stones of the regular arch which are locked tighter by the action of the same laws? From my deductions I think the principles that govern dome and arch construction differ much; but I am, I must confess, unable to explain them technically. The equilibrium of the common arch is insured by a different method. Putting aside the question of friction, the weight of the voussoirs composing the crown is brought up to a defined limit, neither greater nor less; but I believe it is admitted as a principle or theory that the equilibrium of the dome to be maintained must lie in the difference alluded to,—viz., when the upper portion of each circle or series of arches exceeds this limit, presupposing that the dome is composed of the series of arches already mentioned. I must say I would rather be quit of all these suppositions. They are extremely interesting, I have no doubt, as a theory, but in practice there is a mortal terror to be endured by both architect, builder, and workmen, and certain contingencies have to be provided for.

Now I have other notions in my head about domes,—I mean perfect domes;—and they are these:—Domes proper ought, in my opinion, to swell out at a certain defined height considerably beyond the circle of their base; in fact, like columns, they should have an unmistakable entasis, regulated according to the height they are from the ground, and proportionate with their dimensions. I would say that this entasis is necessary for the purpose of preserving their true and well-defined domical profile from being absorbed by the distance they are, or may be, from the eye. If we admit this entasis as a necessity in a very large and very high dome, then as a constructional idea we must imagine two series of converging concentric courses or circles of stone, descending and ascending from the mid point of the entasis on the dome.

In cutting the stone for such courses, there would need to be beforehand a very correct plan, and setting out; but I will not touch the subject of equilibrium in relation, as it is beyond my analytical powers. My readers must bear in mind that I am speaking now of solid and geometrical planning and stone-cutting in view of a solid dome of masonry, with no advantageous backing, bracing, or hidden expedient, to keep body and soul together from parting in this life.

As I am allowed, like others, to suppose a good deal about the theory of dome construction, that may not be absolutely capable of a practical working in all details, I will ask my readers to suppose something with me. Well, then, let us imagine the existence of an enormous block of stone a perfect cone in shape, and that out of this geometrically shaped boulder, it is desired to evolve a dome. To give room for the full play of intellect, let us say the cone is sufficient to allow for the cutting of a dome of the size of that of St. Paul's.

Here now we have a perfectly geometrical figure and basis for our starting-point, and what can geometricians do for us in sweeping a number of curvilinear or spiral lines, so to speak, from the base of the cone to the required height of the dome within the cone? I apprehend there would be something useful evolved in the theory or practice of stone-cutting in working out this problem. There are many other questions which suggest themselves here on this head, but they are too minute. My reason for taking up the figure of a cone as a basis to work out some ideas about dome-construction, is simply to find room at once for the whole application of the conic sections for those who are capable of applying them for the production of a dome.

Now I will once more suppose that the dome is evolved from the huge cone, and the latter stands alone perfect in its outline, forming one of sufficient thickness to be utilised as a body,—say for a spire. Within the figure of the cone we have now a beautiful domical vault, or, perhaps, properly speaking of it as a concavity, a cupola. What then? The core of the dome proper has yet to be cut out, to give us the inside contour; and were it possible to place the huge body of stone, or imagine it placed, in a lathe, the turner could give half a dozen smaller domes, without at all bothering his brain about the intersecting of lines and curves in the art of stone-cutting. As stones, however, have to be worked in series, and not as one body, we are perforce necessitated to consider them as atoms of defined shapes, and deal with them in construction as best we may. So I will leave the further cogitation upon this part of the subject to others more competent than I am to deduce something now which I think is quite probable or possible. Only I fear lengthening out my notions beyond discreet limits, I would ask the reader to suppose other stand-points for building up some more ideas on dome construction. Here is one. Suppose we cut off the crown of a dome—mentally will do for the moment,—and imagine its inside space a well-hole, what is to prevent us in constructing all its courses of stone on the spiral or geometrical stair principle,—one winding on the back of another to the topmost ring, platform, or table? or could we not run the courses similar to the winding courses of an oblique arch, as it would appear if thrown up on its haunches? If possible or practical in stone, of course this would be a very expensive method; but it is the possibility of new constructions, not the expense, we are now considering. Would not each winding course, from top to bottom of this domical helix, taken as a whole, be a sort of elongated key-stone voussoir reversed? yet still developing as a natural law of its domical shape, an inward curve and splay locking the whole fabric together beyond a fear of collapse. Of course, the joggle or rebating, or other method of keying stone to stone, might be adopted for the greater security in connexion, to counteract a tendency to expansion or settlement in any shape.

In relation to the winding in the courses of masonry, each course might be made to wind only once, or make one complete revolution spirally, or as many as were desired. I believe it is admitted that a geometrical or spiral stair starting on a proper basis can be carried to any height, and still preserve its equilibrium. Is it, then, impossible to adapt the principle to the construction of a dome with complete safety? If it were required to run a stair spirally within or without any of our present domes, there is no difficulty in the way of its execution. Why should there be any in relation to the similar construction of the dome?

Without diagrams it would be impossible to convince many what might or might not be done, so I pass to another part of the subject.

Messieurs Engineers and others, a word with you. As a body you have given us a number of hideously ugly iron constructions, but a few of your profession have redeemed their order by giving us some noble iron bridges, which stand forth here and there in the island like beacon lights of hope. Can you, messieurs, do anything for us in the way of dome construction in iron? I do not mean in architectural composition, but in constructional exactitude. Do you think that a dome that can stand on its own legs, a thing of strength, not outraging Euclid or causing Archimedes to jump from his grave, is a work within your mental and constructional grasp? It ought to be, judging you by your own standards.

Presupposing that an anti-corrosive for iron were discovered at last capable of meeting all requirements, I believe that a good iron dome, cast-iron if you will, or "half-and-half," is quite possible, even of the dimensions of St. Paul's. It would be, perhaps, presumption on my part to point out the way it might be constructed; for, indeed, admitting the possibility of construction, the proper method would be a matter of professional opinion. Well, as a first instance, imagine a series of concentric circles of framed iron panelling, converging upwards every circle of bays in the entire circumference of the dome, distinct in itself, yet detachable one bay from another,—one series of bays placed on another, the top bolted to the under one, and so on. Two forms of construction could be adopted in the putting of the work together. A complete circle of bays could go together, and be lifted into its place; or the curvilinear upright sweep of converging bays or panels forming one complete piece of ribbed panelling from base to apex. This is the faint outline: the details could be worked in a variety of ways. The interior edges of the ribs could be cast or worked plain if it was thought advisable, in the first instance, and bronzed or gilt facings screwed on afterwards, worked to any form of tracery or finish. The ornamentation is a matter that has nothing to do with the safety of the construction, which I am speaking about. I have been supposing that a dome could be safely constructed of iron, and I believe one could be constructed, light and graceful in appearance, geometrically exact, architecturally beautiful, and successful as an engineering performance.

* The term "cupola" (from *cupo*, hollow) strictly speaking, applies only to the inside or ceiling part of a dome.—ED.

In the matter of a large lantern, with ball, and cross at the top, like St. Paul's, this requirement would, in my opinion, if it had to be provided, only give the greater chance of successful construction. The ribbed, or perhaps the flying buttress principle under cover could be adopted here. The engineer would not care much for outraging style or pressing Gothic and Classic, Oriental and outlandish together so as it suited his ends, but the architect would pause and hesitate.

A few words more about dome construction. In these days of cheapness and innovation, did any one, I wonder, ever bethink himself of constructing a dome of concrete? Within certain limits it is of course possible; exceeding these limits the construction would require to be of a composite character.

A composite dome, I believe, could be constructed by casting hollow blocks of metal of sufficient thickness, representing the size of the different stones, and, as the work was put together, filling the inside with concrete, not singly, but filling several courses at the one time, so that the continuous bond might be preserved, and the whole body of work rendered more compact. A timber dome, well planned and well fitted together, inclusive of its covering, though a clever piece of handicraft, is not any extraordinary feat in constructive carpentry. Yet we have not many of them that are framed or covered well. Generally a great loss of time and a great destruction of material result from an imperfect knowledge of setting out the work and cutting the timber.

Such are my cogitations, Mr. *Builder*, and if you can detect any grains of reproductive seed in what may be designated by some much "chaff," for sake of the principles involved and my love of the profession, let the matter see the light. Ere now a grain of productive corn has been extracted from within the swathing of an Egyptian mummy, more than 2,000 years in darkness. Domes are as old, and yet we are in some darkness concerning them. Let us think inwards and look onwards, and grope less among dead men's bones upon the Appian Way.

A Craftsman.

THE ANTIQUITIES OF BEWCASTLE, IN CUMBERLAND.*

In his introductory remarks the lecturer expressed a hope that he might be bringing under their notice a place which, while it really had a long and considerable history, was very little known and hardly ever visited. If, however, Bewcastle was known to any among his hearers, it would probably be because of the Runic monument in the churchyard, which was of course by far the most wonderful thing there, and was famous among those who had made Runes their study; but it was not the only interesting thing there. Although the inscription had been read, he had not seen much attention called to the historical value of the writing. He should pay most regard to that point, and should use it as a sort of text for a brief discourse upon the early history of the county of Cumberland. Tracing the present boundary between England and Scotland eastwards from the head of the Solway Frith, it ran first along the little river Sark, and then was continued along the river Liddle, one of the tributaries of the Esk, to the western end of the Cheviot hills, which it followed until it reached the coast. The line of division between Northumberland and Cumberland met that division about halfway, and made with it two angles; on the Northumberland side an obtuse angle, and on the Cumberland side an acute angle, in the point of which Bewcastle stood, so that it had been a border place throughout its history. The scenery of the surrounding country was not without beauty, but it was the beauty of solitude and desolation, the land being now so silent that it was hard to believe it was once busy with active life, and that the loneliness of its hills was disturbed by the tramp of marching armies and the wild scenes of border warfare, at a time when venerable Oxford was but a watery waste.

At Bewcastle, unlike most ruins, things had been left to themselves since the castle was more or less destroyed by the Parliamentary troops. What was once a strong Roman station, one of the outposts of the empire, is now marked by a grass-grown rampart and a few mounds; what was probably a royal city has now shrunk to less than half a dozen houses; the castle is now only four mighty walls, without a trace of moulding or ornament, built evidently for strength alone, and built so well that one huge fragment which had fallen down, lay in the moat one entire piece of masonry. The churchyard is full of graves, almost every one having a headstone enriched with the armorial bearings of forgotten families; and there, too, is the famous Runic monument, standing as a solitary witness of departed civilisation. The Roman station had been placed on a low and irregularly-shaped eminence, and occupied an extremely strong position. The sides were steep all round, especially on the south, which arose abruptly from the little river called the Kirk-beck, *i.e.*, the Church-brook, which ran into the Lyne—a tributary of the Esk. The station was four-sided in shape, and covered an area of six acres. On the north side there were traces of ramparts, which formed probably an outpost. Upon the eastern half of the station stood the church and parsonage, the castle, and a farm called the Manor House; on the south-east the land was washed away by the Kirk-beck. It was quite easy to trace the Via Principalis running across from east to west, and on both sides a break in the Vallum, with two round mounds on each side, probably guard-houses for the defence of the gates. The Porta Prætoria on the north, and the Porta Decumana on the south, were not apparent; the Manor House seemed to be built over the Prætorian Gate. At the north-west corner of the churchyard the foundations of a considerable building were visible, which might be those of the Prætorium or general's head-quarters. The clergyman at the parsonage had a small collection of coins and other things which had been turned up there; one piece of ware had stamped upon it, "Martini M.," *i.e.*, that it was made by the hand "Manu" of the potter Martinus. Several altars had also been found. The relics which struck him most were the querns, which at Bewcastle seemed quite plentiful.

The Romans must first have visited Bewcastle under Agricola, who commanded here from 78 to 84. Under him they conquered the Isle of Anglesey a second time, pushed on northwards through Lancashire, Westmoreland, Cumberland, and the Lowlands of Scotland, and reached the isthmus between the friths of Forth and Clyde, where Agricola built a line of forts designed as a protection from the savage tribes beyond. Though Agricola gained a great victory over the Caledonians at the Grampian mountains, it had no lasting result, and the Romans never made any permanent conquests beyond the line of forts. Before 79 or 80, when the Romans visited Bewcastle, it might have been one of the strongholds of the Britons, and would therefore be fortified by the Romans to secure it. On the withdrawal of Agricola the Northern barbarians became so troubled as to bring about in less than thirty years such a state of things as required the presence of the Emperor Hadrian, who drove back the Britons, and drew a vallum, *i.e.*, a dyke and rampart across the island, from the mouth of the Tyne to the Solway Firth, to protect the country south of it. Bewcastle, however, lay north of Hadrian's dyke, and did not partake of its protection. The submission of the tribes to Hadrian was only transitory, for in the reign of his successor, Antoninus Pius, the northern district was again a prey to their inroads. To guard against this a rampart of turf was constructed along the line of Agricola's forts, now known as Graham's dyke. From the time of Severus until the victories of Theodosius the elder, the country between the two dykes was entirely abandoned to the natives for upwards of 150 years. Theodosius once again subdued it and gave it the name of Valentia, in honour of the Emperor Valentinian. The troops were withdrawn in 383, and never returned, and the province of Valentia, the land between the walls of Antoninus and Severus, were finally lost to the Romans. In 410, Honorius, the Emperor of the West, wrote to the State of Britain "to provide for their own defence," which brought them to the end of the first period of the history.

The Runic monument was the memorial of the next age. Mr. Nanson said he was not going to enter into the Pictish question, but would be content to suppose the people who occupied Bewcastle after its evacuation by the Romans were the same who were known later as the Picts. The question seemed a sort of ethnological bugbear, which most antiquaries and historians, unless they were fired with the zeal of Mr. Jonathan Oldbuck and his knightly antagonist, were content to leave alone. By these non-Romanised Britons was founded the kingdom of Strathclyde or Cumberland. It was an independent Celtic kingdom, and for some time sustained the honour of the British name in the North of England. The Cumbrian Britons were not an unmixed people, for there must have been amongst them a considerable number of Picts and Scots. The kingdom included three great principalities, named by Sir Francis Palgrave as follows:—1, Reged may perhaps be placed in the forests of the south of Scotland; 2, Strathclyde may be traced in Clydesdale, and the local name ought to have been confined to that region, but being the seat of the "Teyrn," to whom the other British kingdoms of the north were subject, the same appellation was easily extended beyond its proper boundary; 3, the Terra Cumbrosum, which included the modern country of Cumberland, together with its appendages, or dismemberments of Lancashire and Westmoreland, the latter of which may be traced as the principality or kingdom of Westmere. Bewcastle would belong to the last division. . . . . .

Speaking of the Runic monument, Mr. Nanson said he should follow Mr. Maughan's translation of the Runes. It was fixed upright in a stone pedestal, above which it rose to the height of 14½ feet, though it must once have been higher, there evidently having been a cross at the top. It was covered all over with sculpture in low relief, exceedingly well done. The ornament consisted of a vine twining up one entire side in exquisite curves, and on the branches were perched birds and squirrels eating the fruit. Two of the sides were sculptured with vines, and the wonderful and beautiful knots which were so favourite an ornament at that early period; there was also a large space filled like a chess-board with chequered diaper. The remaining side contained three figures and the principal parts of the inscription. The top figure was, that of a man holding what appeared to be a lamb in his arms, which has been supposed to be St. John the Baptist carrying in his arms the Agnus Dei. Below were the words "Jesus Christus," and under them a figure in priestly robes, with a glory encircling the head, and the hand raised in the act of blessing. Below the figure of our Saviour was most of the writing, and at the bottom of the pillar a man standing sideways with a hawk on his wrist, supposed to be King Alcfrith. The inscription was translated as follows:—"Hwætsed, Wæthgar, and Alfwold set up this thin beacon in memory of Alcfrith, a king, and son of Oswin; pray thou" either "for them, their sins, their souls," or, as some say, "for his soul's great sin." So that if the translation be right, it must be to mark the burial-place of Alcfrith or Aldfrid, king of Northumbria. Returning to the history of Northumberland, Mr. Nanson related the circumstances under which Peada, the son of Penda, was converted to Christianity by Alcfrith, leading to the Christianising of Mercia; so that the hero of the Runic cross at Bewcastle might have been the means of sending Christianity into parts of England not far from Oxford.

* From a paper read at a meeting of the Oxford Architectural and Historical Society, on March 5th, by Mr. W. Nanson, Trinity College.

SUB-MARINE TUNNELS.

Sir,—When I sent the few particulars relating to the Norwich works to the *Builder*, I had not any idea of entering into a controversy on the subject of the Channel tunnel; but, as "A Practical Engineer" puts certain questions, it is only right to reply to them. Duplicate engines were not employed, because the sumps were placed at tolerably short distances apart, so that if any one engine or pump failed, it was assisted by those right and left of it; and, from the streets of the old city being very narrow, it was quite difficult enough to find space to place even one engine. At one important point we had three engines and pump together. Of course, where the pumping machinery, as in the Channel tunnel, would be about *eleven miles* apart, it would be absolutely necessary to have *at least* duplicate machinery.

With regard to the other question, "Did he keep the brickwork well up to the face of the mining?" the rule was, that when the miners had completed a 10 ft. or 12 ft. length, the bricklayers went in and put in their work; and were again succeeded by the miners. This was done, unless any special circumstances prevented its being followed.

"The Secretary of the Company" states "that there are already some hundreds of miles of tunnels (colliery and lead-mine workings) *under*

the sea." I much doubt this, and shall be obliged if he will name a few of the details, as I am much interested in the subject, and believe it will puzzle him to specify even ten miles. Moreover, the strata in which minerals are found consist of rocks and shales, which are much more impervious than chalk, either upper or lower; in fact, the metalliferous rocks have even allowed workings to be carried up to within a few feet of the bed of the sea; and in one place, in the Botallick mine, the miners actually broke through the roof of the heading into the sea, and the opening is now only stopped with oakum and a wooden wedge. Imagine this in lower chalk!

ALFRED W. MORANT.

COLOUR ON THE EYES OF GREEK SCULPTURE.

SIR,—May I be allowed to make a remark on your correspondent "Nemo's" letter of last week? While I am thoroughly desirous to agree that the "exquisite instinct of the Greeks" did eventually lead them to discard colour in sculpture, yet the "uniform blankness of the eye," which your correspondent claims for that taste, is not borne out by facts. In the Selinuntine marbles at Palermo, black is distintly traceable on the pupil of the eyes of the Medusa in the group of "Perseus and Medusa." A second instance is found in the Æginetan marbles in the Glyptothek in Munich, which bear traces of colour on the eyes, but *none on the flesh.* And, thirdly, in that splendid portrait relief from Marathon, of "Aristion," now in the Temple of Theseus at Athens, there is, if I remember rightly, distinct colour on the eyes, as well as in most parts of the dress and armour. I omit other more questionable instances. The three which I have quoted are enough to show that the instinct of the Greek did not uniformly restrain him from colouring the eyes of his statue.

G. S. DAVIES.

BELLS.

THE "Bell Catalogue," a trade-book just now issued by Messrs. Warner & Sons, of Cripplegate, contains information as to the cost of bells of various sizes and descriptions, which many will be glad to have. It includes also a long list of inscriptions for bells. It may be worth noting that the approximate cost of a peal of five bells and fixing, complete, is 290*l.*; a peal of six bells, 500*l.*; and a peal of eight bells, 700*l.*

PROJECTIONS BEFORE THE GENERAL LINE OF BUILDINGS.

AT the Westminster Police-court, before Mr. E. H. Woolrych, an adjourned summons was heard upon a question of considerable importance affecting buildings in the metropolis as controlled by the certificate of the superintending architect of the Metropolitan Board of Works.

The complaint was preferred by the Vestry of Chelsea against Mr. Aldridge, the owner of the house, No. 27, Smith-street, in that parish, for having erected a lavatory which, it was alleged, formed a projection beyond the general line of buildings of Smith's-terrace.

Mr. Reeves, of the firm of Messrs. Pemberton & Reeves, appeared for the Vestry; and Mr. Brewer, from Messrs. Baxter, Rose, Norton, & Co., the solicitors for the Governors of the Hospital for Consumption, Brompton (who occupied the house as a home for patients), for the defendant.

Considerable legal discussion took place, particularly as there appeared to be a conflict of decisions in the Courts of Queen's Bench and Common Pleas, as to whether the magistrate was bound by the certificate of the superintending architect without the power of exercising any discretion on his own part.

His Worship decided in favour of the defendant, and dismissed the summons on the ground,—

1. That he considered he had a discretion, and was not conclusively bound by the architect's certificate.

2. That it would operate most injuriously if parties, who might innocently erect expensive buildings, were afterwards met by a certificate of a line of building of which they previously knew nothing, and were obliged to demolish their buildings.

3. That in the present case the architect's line was irrelevant to the projection in question, it being a line for the houses in Smith-terrace, which were a considerable distance in the rear of the house in Smith-street; and which line, if protracted to Smith-street, would cut off not only the entirety of No. 27, but one-half of the house next door. It appeared that the offending building did not project so far as an existing ancient part of the house, and that in fact it had been completed with the knowledge of the local surveyor, who at last simply complained of its height.

The magistrate expressed a strong view that it would be a very harsh application of the Act to authorise the demolition of the erection complained of. But on the application of Mr. Reeves, for the Vestry, he consented to grant a case, if it were desired to take the opinion of one of the superior courts.

IN the Equity Courts, before Vice-Chancellor Sir R. Malins, an injunction has been granted in the case of Lord Auckland *v.* The Westminster District Board of Works. This was on a motion to restrain the defendants from taking any proceedings for the purpose of compelling the plaintiff, his builder, or any person employed by him, to abstain from erecting buildings upon so much of the site of Nos. 1, 2, and 3, Buckingham-row, Westminster, as was outside the line decided by Mr. Vulliamy, the superintending architect of the Board, to be the general line of buildings in York-place. In November, 1870, the Metropolitan Railway offered for sale, by auction, a part of their surplus lands in Westminster, and Lord Auckland, who had a house in Queen's-square, purchased, for the erection of stables, a lot on the south side of Buckingham-row, containing 2,500 superficial square feet. When taken by the railway, the plot formed the site of three houses with front gardens at the corner of York-place, but the houses had been pulled down, and the site was sold to the plaintiff for 650*l.* as building ground. The plans for the stables were submitted to the District Board; and, after considerable delay, they, having communicated with the Metropolitan Board on the subject, informed Lord Auckland that he could not be allowed to build beyond the general line of buildings in York-place; a decision which, according to the plaintiff's statement, rendered the land worthless for the purpose for which he had purchased it.

The Vice-Chancellor said he could not allow the Board to deprive the plaintiff of the benefit of his purchase without giving him compensation, and therefore granted the injunction.

CATHEDRAL OF PADERBORN.

MONSIEUR ET TRÈS-HONORÉ CONFRÈRE,—Voulez-vous m'ouvrir les colonnes de votre estimable *Builder*, pour une petite rectification au sujet de la Cathédrale de Paderborn que Mr. H. W. Brewer m'accuse, dans votre numéro du 16 Mars, de classer dans les églises rondes et de confondre avec le dôme d'Aix-la-Chapelle.

Voici ce que je dis de la Cathédrale de Paderborn, dont je n'indique nullement la forme, mais que je classe seulement, sur l'autorité de Wiebeking (Architecture théorique, au Munich, t. v., in-4°, 1829), dans la partie de mon travail consacré aux Églises, dans la construction desquelles le souvenir du Saint-Sépulcre de Jérusalem exerça une certaine influence:—

"*Le Dom ou Cathédrale de Paderborn* (Prusse) dut sa première fondation à Charlemagne, qui le fit ériger au-dessus des sources de la Pader, après le fameuse diète tenue en cette endroit vers 777, et où ce prince reçut le serment de fidélité des Saxons; mais, suivant Wiebeking, l'évêque Mainwerck le fit reconstruire, au commencement du XIe siècle, sur le modèle de l'église du Saint-Sépulcre de Jérusalem. Cette cathédrale, plusieurs fois incendiée, de 1057 à 1133, fut réparée et agrandie de 1134 à 1243, grâce surtout aux soins des évêques Bernût et Œsida, et conserve encore des parties de l'édifice datant de l'évêque Mainwerck."

Veuillez, je vous prie, tenir l'exemplaire qui accompagne cette lettre à la disposition de Mr. Brewer, en remerciement de la liste des principales églises rondes ou polygonales d'Allemagne qu'il indique, et dont je ferai mon profit pour le compliment de mon travail.

En vous présentant, Monsieur et très-honoré Confrère, tous les affectueux respects de votre tout dévoué,

CH. LUCAS.

A TECHNICAL COLLEGE FOR GLASGOW.

THE proposal to found a Technical College in Glasgow has originated in the belief that no city in the empire stands more in need of such an institution, or will derive from it greater and more immediate benefits.

The object of the promoters is to provide such a system of technical education as shall embrace scientific instruction in the theory, and as far as possible in the practice, of the various great industries of the city, so that the manufacturers, managers, and overlookers by whom such industries are conducted may be thoroughly acquainted with the principles of science upon which they are based.

It is proposed that the Technical College of Glasgow shall be in unison with Anderson's University, the Mechanics' Institution, and the School of Art and Haldane Academy,—institutions which already embrace instruction in branches bearing upon technical education.

The promoters of the college aim at ultimately raising a sum of at least 50,000*l.* to carry into effect the proposed object. This fund to be applied as follows:—

1. In providing lecture-rooms, class-rooms, and suitable accommodation for apparatus and illustrative material.

2. In payment of lecturers and teachers.

3. In purchasing mechanical and chemical apparatus, models, drawings, specimens of industrial art, and natural products applicable to manufactures.

4. In meeting the general expense of maintenance and management.

We observe the names of three architects amongst the committee of promoters,—Mr. John Honeyman, Mr. Alex. Thomson, and Bailie Salmon. The Lord Provost and several members of Parliament are among the number. In short, those who have taken the subject up are men of the highest standing in Glasgow in connexion with the various industries to be benefited, and the scheme, we are glad to understand, has every prospect of being successfully carried out.

THE NINE-HOURS MOVEMENT IN LONDON.

SIR,—I trust you will not think it out of place to review in a brief manner the agitation of the nine-hours question between the masons and the master builders of London, which up to the present time has been conducted very quietly and almost privately.

In the first place, it will be as well to state that at the request of the employers we commenced working the nine hours for the three winter months, commencing on the 9th of November and ending on the 14th of February, in the winter of 1866 and 1867, being a reduction in wages of 3s. 8d. per week. That system has been continued, with great advantage to both parties, up to the present time, when the masons thought that the system might safely and advantageously be adopted throughout the year, seeing that it was becoming a general thing in all branches of industry. They met together last November, and agreed to present a memorial to the employers on the 1st of January, 1872, giving them notice that we wished to continue the nine hours from the 14th of February of the present year; also asking for an advance of one penny per hour, to commence on the 1st of July, 1872, being six months' notice for the advance of wages, if it might be so called, but in reality it would be the same total (as near as our coinage will admit of) for the 51 hours as it is now for the 56½.

Well, sir, after the notice was sent in, correspondence and interviews took place between the masons' committee and Mr. Piper, the secretary of the Master Builders' Association; and ultimately the employers issued a circular to the masons, declining to concede the terms of our Memorial, stating for their reasons *that it would cause public dissatisfaction and great inconvenience.* On the receipt of that we held another meeting; and, to avoid a strike, the committee were instructed to write to the Builders' Association, respectfully requesting them to receive a deputation from our body, believing it would lead to an amicable settlement of the question in dispute. The request was granted, and the 19th of February appointed for the meeting; when, to our great disappointment, the employers' committee was not in authority to dispose of the question, but only to hear what we had to say for our cause, which they listened to with great respect and courtesy, and advised us to ask their Association to appoint a committee with power to make arrangements for finally settling the question; and from the general expressions and tone of their remarks, we had reason to hope that we were near a peaceful solution of our difficulty; but we were mistaken, for after we had sent in the request for them to appoint an authoritative committee, and waiting a fortnight for an answer, they wrote, saying they saw no reason to depart from the terms of their Circular, referred to above. So, after leading us to believe they were pacifically inclined, they turn round with a blank refusal for further negotiations. Whether they have acted wisely or unwisely remains to be seen. When our time comes we shall be prepared to act upon experience. My object in writing this letter is to clear ourselves from the charges so frequently and freely made against us of being hasty and dictatorial. Let the readers of this draw their own moral from the above facts.

R. SCOTT, Stonemason.

THE TRADES MOVEMENT.

Oxford.—A meeting of masters and a deputation from the men engaged in the building trade, now on strike at Oxford, has led to a satisfactory arrangement, to the effect that 56½ hours shall constitute a week's work, to commence on the 1st of April, and that on and after the 1st of November 54 hours shall be sufficient.

Keswick.—The masons and wallers in Keswick are still out on strike. The terms they demand are 3s. per week advance during the summer months, which would raise their present rate of wages from 24s. to 27s. per week. The labourers employed in the building trade also demand that their wages be advanced from 18s. to 20s. per week during the same period, the old rate to be paid in winter as hitherto.

Penzance.—A large meeting of masons has been held to consider the best means of adopting the nine-hours movement without injury to the masters. The chairman invited the opinions of the audience (numbering over seventy), when the following resolutions were adopted, viz.:—"1st. That 54 hours constitute the week's work, the men working 9½ hours each day (except Saturdays), and on Saturdays working 6½ hours, leaving work at one o'clock. 2nd. To be paid by

the hour. 3rd. To receive 4½d. per hour for eight months in the year, and to receive 5d. per hour during the remaining four months, which consist of short days, being only eight hours' daylight. 4th. A deputation be selected, and requested to wait on the masters, to invite their consideration and approval of the same." The chairman said he sincerely hoped that the present harmony existing between masters and men would still continue; and he felt assured the masters (as on former occasions) would openly and fairly meet the deputation, and finally decide in favour of the men.

Abergavenny.—At a meeting of the *employés* in the building trade it was stated that the masters were agreeable to give the men 55 hours per week, but would not advance the wages. The men determined to strike. Six men were deputed to see the masters, with full authority to settle the question on the best possible terms. The whole body of masons, however, seceded, and said they would not again solicit the employers for another interview upon the matter. The same evening the carpenters, joiners, plasterers, &c., met together, when the deputation stated the masters would give the 54 hours and no more. It was then resolved that no work be commenced until the employers make a concession with respect to the wages, and the meeting separated with that understanding. Some of the master plasterers afterwards agreed to give their men 2s. advance, and the hours, which was accepted, and the men went to work. The body of carpenters from one firm went in by having the 54 hours only. Another body of carpenters commenced work on having 2s. advance and the hours asked for. It was afterwards understood that the remainder of the carpenters and joiners, who stood out, were to be paid 5½d. per hour and receive the reduction of hours. They agreed to commence work on the following day. A meeting of the masons was held. A statement was made that some employers were agreeable to give the hours, and an advance of 3d. per day. One master was agreeable to give time and money to those men who were worth it. A proposition was put to the meeting that the masons accept 3d. per day advance and go on to work. As an amendment, a speaker proposed that no work be commenced until they get the time and money asked for. Upon being put to the meeting, the amendment was carried unanimously. The masons placarded the town, warning those masons who might come to seek work not to accept it, as the men were on strike.

ST. STEPHEN'S CHURCH, HAGGERSTON.

On Tuesday, the 5th inst., the new church of St. Stephen, Goldsmith's-row, Haggerston, a densely-populated neighbourhood, where the want of adequate church accommodation, has been long felt, was consecrated by the Lord Bishop of London. In plan, the church consists of a nave of four bays, with north and south aisles, and apsidal chancel with aisles, that on the south side being used as a vestry, with an organ-chamber over. At the west end are two large two-light windows, surmounted by a circular window, and over the nave arcade on the north and south sides is a clearstory with two-light windows. At the east end of the chancel is a three-light trefoil-headed window in the centre bay, and single-light windows, also trefoil-headed, in the sides of the apse, all of which will hereafter be filled with stained glass. The ceiling of the nave is boarded under the rafters, that of the chancel being divided into rectangular panels filled with gilt stars on a blue ground. In the ceiling of the sanctuary, the martyr's crown and palm, in honour of the patron saint, are introduced; over the junction of the nave and chancel is an octagonal bell-cot of oak. At the west end of the nave stands the font, of sufficient size to admit of immersion, the octagonal bowl of which is of Caen stone, and is supported by a red Mansfield centre shaft, and four smaller angle shafts with moulded capitals and bases. In the panels on the "cardinal" faces of the bowl are introduced the sacred monogram, twice repeated, the Cross, and the Holy Dove.

The seats in the nave are of deal, stained and varnished, with open backs and solid ends. The chancel is elevated six steps above the floor of the nave, the table being raised on two additional steps. On the north side of the chancel is an open parclose of oak, separating the chancel from the aisle, and in the corresponding arch on the south side will be the organ. On the north side of the sanctuary is a credence-table, opposite to which is the usual arrangement of sedilia and piscina. Above the altar is a re-table, over which is the reredos, in three compartments, the centre containing a large cross in statuary marble, on a diapered and gilt background.

The church is constructed of brick throughout, with coloured bands. It has been erected from the designs, and under the superintendence, of Mr. Francis T. Dollman; Messrs. Dove, Brothers, being the contractors.

The building will accommodate 600 worshippers, and the cost will amount to about 5,000*l.*, a great part of which has been bestowed by one or two munificent contributors.

ACCIDENTS.

Fall of Building in Stockport.—An inquest has been held on the body of one of four men injured by the fall of an old building in the mill-yard of Mr. Dickie. A bricklayer, living in Heaton Norris, said deceased and others had been pulling down the walls of an old mill, under the direction of Chas. Hadfield, plumber and glazier. He was a practical man for that purpose. They had the roof off, and had got down a part of two of the upper stories. Witness was bricklaying at the boiler-house underneath. The wall which they pushed over was 10 ft. high by 13 ft. long, and built against the principal building that fell. There were two iron beams running over the round columns, but were without a tie, and when the wall was knocked down it so shook the building that it drew out the untied beams; the wall gave way. and the bricks fell upon the deceased, who was dressing the old bricks below. There was no contract work; all was day-work, both with bricklayers and labourers. Samuel Gaskell, manager, attributed the accident to the absence of any ties to the ends of the beams. The moment the old wall was removed, the building to which it was attached of course fell. Every precaution was used on the occasion. The jury decided that the cause of death was purely an accident.

Fall of a House in Dublin.—A house situated in Werburgh-street, Dublin, has fallen, the entire back part of the building coming down with a crash, leaving only the front wall standing. The police immediately took precautions to stop the traffic in the street, which is in a dilapidated state. Efforts were also made to get out the inmates, and, with the aid of the fire brigade, this was accomplished. One woman was insensible, and had to be sent to the hospital. Another was severely hurt, and a third only saved herself by clinging to the rafters until help arrived.

DISASTROUS FALL OF HOUSES IN CHELSEA.

On Tuesday last, Dr. Diplock, the coroner for West Middlesex, resumed, at the Chelsea Workhouse, an investigation respecting the death of Charles Free, aged sixteen years, who lost his life through the fall of two houses, 163 and 165, Marlborough-road, Chelsea.

Mr. G. Lewis, solicitor, appeared for Mr. Hill, contractor, who at the time of the fatal occurrence was engaged in making the two houses into one by removing the party-wall and putting up a new brestsummer; Mr. Roberts, of Gray's Inn, represented Mr. Watts, the landlord; and Mr. Newman watched the proceedings for Mr. Jones, a linendraper, who was the tenant of the fallen houses.

Mr. Walter J. Hill deposed that he was the son of Mr. Hill, the contractor. The fronts of both houses were taken out, and a new brestsummer had been put in, in order to support the upper part of the houses. The brestsummer was 30 ft. in length. In the front of the house and underneath the party wall there was an iron column, 4 in. in diameter. Witness did not know when the shoring of the houses had been taken down. The column rested on a wall, and neither the column nor the wall beneath had been erected by Mr. Hill. When the houses fell men were nailing down a new shop flooring, and the party wall and brestsummer came down; the column went through the flooring, and witness and the men had just time to run out into the street before both houses fell. He would swear that he did not remove the struts supporting the houses before they fell

Mr. Sancton Wood, the district surveyor, said that on the 10th of February he received notice in accordance with the Building Act, that it was the intention of Mr. Jones to alter his shop-fronts. The notice did not state that the party-wall was to be removed. He then visited the premises, and he found that nothing had been done. He afterwards went to the houses several times, until at last he saw that a scaffolding had been erected in front of the shops, and they were covered with blankets, table-cloths, advertising placards, and, in fact, the greater part of the stock-in-trade of Mr. Jones. Witness then said to Mr. Jones, "When are you really going to build?" and Mr. Jones replied, "This is rather a good arrangement at present." It was then agreed that Mr. Jones should send to witness to tell him when the building commenced, but he never did so, and witness therefore only saw the house after they had fallen, and he then examined the basement walls of the houses. They were the worst walls that witness had ever seen in his life. He was aware that such walls existed in the neighbourhood. The bricks of the walls were bad, and the mortar was merely roadscrapings. The houses fell through the giving way of the column.

Mr. T. Spradbury, builder, said that he had examined the fallen houses, and he believed that the catastrophe had been caused by the rottenness of the walls.

Other similar evidence having been given, the inquiry was adjourned till, this, Friday, 22nd.

We must compliment the coroner on the care and acuteness shown by him in the inquiry, and would suggest that he should obtain the opinion of a professional man unconnected with the work.

UNSAFE LANDINGS.

At a meeting of the St. George's, Hanover-square, Vestry, a letter was read from Mr. Gouldsmith, of Pont-street, on behalf of Col. Hamilton, of 118, Eaton-square, complaining of the unsafe condition of his landing, and announcing that he will not hold himself liable for any accident that may occur. A proposal was made to have the case settled by the magistrate, but Col. Scott said he hoped this course would not be adopted. A legal opinion—that of Mr. Thrupp—had recently been taken, which was against the Vestry. He understood that other parishes had been legally advised to repair such landings. Mr. Mitchell said the parish of St. Margaret, Westminster, repaired the landings where necessary, and lately Chelsea did the same in Cadogan-street, near the Catholic cemetery. If a poor parish like Chelsea could repair landings, surely a rich parish like St. George's might do it. He would suggest that the letter be referred to the Vestry, which course was adopted.

CHORLEY TOWNHALL COMPETITION.

Sir,—I would take it kind if you can learn for me the decision arrived at in this competition.

The drawings were sent in on the 1st February, and no notice has been taken of them further than that they were to be exhibited to the public some three weeks ago.

If any of your correspondents can inform me, through your columns, of the results of the committee's deliberations, it would interest not a few who competed.

A Competitor.

MARBLES FOR THE NATIONAL GALLERY.

Sir,—I wish to call your attention to a large contract for marble-work about being put up in the National Gallery. The specification names Belgian marble. I sent estimates to some London marble masons, who are my customers; but it appears Irish black marble will not be accepted (though equally good). Green marble is also required. There is no green marble in Belgium; the very finest is raised in Ireland. Is it not worth considering whether foreign marble should be used for a national building when better marble of the colours required can be had at home, and cheaper?

Alex. Colles,

Kilkenny.

"LEAKY SEWERS."

The vagueness of "Q. E. D.'s" answer to my letter on this subject in the *Builder* of Feb. 24th, being probably produced by a fault of mine in not supplying sufficient data, I wish if possible to afford same.

The bricks used were "hard brimstone lumps," laid in Portland cement, one to one, the sewer being on an average below the water level of the land about one-quarter of its diameter. There are only four junctions prepared for future connexions being say one every ten chains, which have been made practically water-tight.

If any of your readers have tested the average leakage in a 4 ft. sewer of 4½ in. brickwork due to percolation in different descriptions of soil, and will give me the benefit of their experience, I shall be much obliged, as a local question of some importance has arisen on this subject.

B. A.

ARCHITECTS' BENEVOLENT SOCIETY.

The annual general meeting of this Society was held on Wednesday, the 13th instant, at the rooms of the Royal Institute of British Architects; the chair being occupied by Mr. George Mair, F.S.A., in the unavoidable absence of the president, Mr. Sydney Smirke, R.A.

Amongst the members present were Messrs. C. C. Nelson, D. Mocatta, F.S.A., William Moseley, Thomas Cundy, Wyatt Papworth, J. Goldicutt Turner.

The Report laid before the meeting, and which the chairman read, showed that,—

"The net increase in the number of subscribers to the funds of the Society, after deducting deaths and retirements, is twelve; the donations have exceeded the amount of the preceding year by 38*l.* 3s.; and the balance now in hand has increased by 22*l.* 11s. 8d. During the past year seventeen cases have been relieved; of that number thirteen were widows."

The report drew attention to the circumstance that out of over 500 members of the Institute, only about 160 have as yet enrolled their names on the list of this Society.

The chairman having moved the adoption of the report,

Mr. D. Mocatta, in seconding it, said he wished to bring the fact before the meeting, the Royal Institute, and the profession, that during the past year the council had felt themselves only justified in making grants to applicants for relief of a sum in total upon the year as would barely

give 10*l.* average to each, a gift, he considered, too paltry and insignificant, when it was borne in mind the class of persons who sought aid. He hoped the appeals of the Society would not be in vain.

Mr. C. C. Nelson said, speaking as a member of the council, he could assure the profession that if they knew the number of most deserving and distressing cases that came up for relief, he was certain more funds would be forthcoming.

Mr. William Moseley wished it known that neither was the amount of subscription fixed at 1 guinea nor was it only members of the profession who were eligible to become subscribers; and that all subscribers of 1 guinea could recommend applicants.

Mr. John Turner, the honorary secretary, called attention to the fact that whilst many members of the profession subscribed to the Builders' Benevolent Society, but few of that calling were subscribers to this.

The report was then adopted *nem. con.*

The treasurer's, Sir William Tite's, account, as audited by Messrs. Charles Fowler and Henry Jarvis, was then discussed, from which it appeared that the gross receipts for the year amounted to 388*l.* 8s. 4d.; gross payments, 317*l.* 10s. 4d.; balance carried to next account, 70*l.* 18s.; that out of the payments, 62*l.* 15s. 6d. had been invested, and that the gifts to applicants were 163*l.*; the stock now standing in the Society's name amounts to 1,664*l.* 11s. 11d.

Mr. John Turner then announced some donations just received, which were:—Sir M. D. Wyatt, 5*l.*; R. L. Roumieu, 5*l.*; J. L. Phené, 5*l.*; George J. J. Mair, 5*l.*; John Turner, 5*l.* He also read a letter from Mr. J. H. Hakewill, stating it to be the intention of himself and his brother hereafter to double their subscriptions.

After the formal business had been transacted, the meeting was closed by a well-deserved vote of thanks to the chairman.

CONDITION OF NEWLYN, NEAR PENZANCE.

IN September, 1870, we directed attention to the sanitary condition of this place. The authorities did make a feeble effort, and as imbecile as feeble, to reform matters. It will be remembered that, for one thing, the local county magistrates tried to make a scapegoat of the county surveyor, and failed contemptibly.

And now the condition of the place may be gathered from the following, taken from the *Cornish Telegraph*:—

"WHEN WILL SUCH A STATE OF THINGS BE REMEDIED? In the course of an inquiry, at the last Penzance County Court, on the liability of parties to keep a drain repaired at Newlyn, it came out that the drainage of seven or eight houses in Factory-row emptied into a main sewer, which runs through the garden of the Navy Inn. This sewer is open in the garden, and passes by the mouth of a well, from which it is only divided by a kerbstone! Then it passes under the Navy Inn. The present owner of the drain, who, with his predecessors, has had to keep it in repair for the houses in the rear of his premises, said there had been two cases of fever in the house and two deaths. In the winter, with plenty of water, the drain under the house was tolerably clear, but in the summer it was foul and most offensive. The judge ascertained from one witness that there are only five privies in all Newlyn, and from another there are certainly not ten! The Judge: And this is the state of Newlyn in 1872; a state of things which might have been expected 400 years ago, but is almost incredible now, except for the evidence of one's own senses, if he happens to visit Newlyn and—comes out of it again alive?".

It will thus be seen that our report on the place, shocking as it was, was far within the real facts. At the time we were of opinion that the report of the Government inspector was far too complaisant to be of any use: we are sorry our opinion receives such powerful confirmation.

PRO.

METROPOLITAN TRAMWAYS JOINT COMMITTEE.

A COMMITTEE of Lords and Commons has been appointed to inquire whether it is desirable or not that any additional tramways should be laid within the metropolitan area; what should be the limits of the metropolitan area in respect to tramways; under what authority the construction and working of metropolitan tramways should be placed; and along what lines of streets, if any, the tramways shall be allowed to be constructed, and under what restrictions.

The Committee will meet to hear evidence on the 15th of April, after the Easter holidays.

Miscellanea.

The Snow.—The metropolis was visited on Thursday with a heavy fall of snow, commencing about twelve o'clock and continuing for some hours. About two o'clock the scene was most picturesque. Scarcely a breath of wind disturbed the steady, graceful dance of the white aërial deposits. The trees in the parks and squares were lovely to behold. The romantic scenery and vista were most extraordinary. No artist on his travels could have failed to observe the beautiful subjects which Nature in such a short time had presented, and which, even to the least-tutored mind, had a most delightful aspect.

The Tramways in South London.—The London Tramways Company are endeavouring to extend their system in South London. At the present time their trams run over 16¼ miles. They run from Westminster Bridge to Brixton and Camberwell; also from Westminster Bridge, through Camberwell and New Cross to East Greenwich. They run also from Blackfriars Bridge to Brixton, and from the same terminus to Greenwich. The Company are about to apply to Parliament for leave to open some additional lines, including lines from the Horns, Kennington, to St. George's Church, Borough; from Westminster Bridge to Whitehall-place; from the Obelisk, St. George's-circus, over Waterloo Bridge, to the Strand; and Victoria-street, Westminster, to the Abbey. The company appear to be doing a considerable amount of business on their existing lines in South London, their receipts during the last four months of 1871 amounting to 24,709*l.* 2s. 5d.

The Health of London.—The periodical titled "Labour and Unity," thus urges a point before now pressed by us:—"We contend, the health of London can only be known, and thereby only attainable, by returns of sickness instead of the mortality it now gives us; because the only value to be relied on must be by the medical staff themselves. To the Ancient Order of Foresters and the Society of Odd-Fellows we can only look for information in this particular. These useful institutions record their rate of sickness per day per member, and from such information is compiled that valuable detail which may be called the true record of health. The readiness with which this information is obtained is as simple as it is effective, and if it can be so successful on the 700,000 to 800,000 members of these institutions it can be made also as available for the community."

Society of Arts Window for St. Paul's.—It has been suggested that the Society of Arts should provide a memorial of Thanksgiving Day in the form of a painted window, to be set up in the cathedral, thus helping at the same time to complete the decoration of the interior of that edifice. A fund for this purpose is being raised among the members by subscription, each member of the Society being at liberty to subscribe 5s. for himself, and the like sum for each member of his family. It is to be hoped that British glass-painters will be employed.

Discovery of Roman Remains in Gloucester.—Some interesting Roman remains have been brought to light on the premises of Mr. Rumsey, of Southgate-street. An excavation had to be made in the cellar, and at a depth of about 10 ft. from the surface of the footway, the workmen came upon the border of a tessellated pavement. The tesseræ are of white and black, first in bands, and next worked in a design like that of a carpenter's square. The floor is in excellent preservation. The pavement is laid parallel to the street as it now exists.

Asphalte Pavements.—A new experiment, writes the *Mining and Commercial Times*, is about to be tried in the method of asphalting roads. The Patent British Asphalte Company have contracted with the streets Commissioners to lay its asphalte over the existing granite cubes in King William-street, City, so as to save the expense of removing the existing road-pavements, and insure a firm foundation for the asphalte covering.

Art-Union of London.—An advertisement in our present issue announces the approach of the last day for subscribing. It will be noticed that the first prize in the distribution will be a life-size marble statue, "The Wood Nymph," for which the sculptor, Mr. Birch, was awarded a premium of 600*l.* by this society, the result of a competition, when fifteen artists exhibited. The set of prints relating to the sea and coast scenery, from the works of David Cox, Copley Fielding, and Samuel Prout, given to each subscriber, are worth more than the guinea subscribed. Such is the result of co-operation.

State of Hammersmith Bridge.—In view of the approaching University Boat Race, attention is again drawn to the condition of Hammersmith Bridge, and the proprietors of that structure are entreated to employ an engineer, in order to report whether it can safely carry the weight which will be imposed upon it.

Mr. Henry Ashton, Architect.—The death of this gentleman, in his 71st year, is announced.

The Art Schools at University College, London.—The following is an extract from a private letter written by a lady now studying in the Art Schools of University College, which have recently been opened to students of both sexes:—"Since Christmas I have been working hard every day in the Art Schools, which have lately been opened under E. J. Poynter, A.R.A. I think male art students must be more amiable than medical students, for the utmost harmony prevails in our classes. We work together in the antique room, and three days a week from a half-draped live model; the other three days the male students have a nude model in one room, and the ladies a draped one in another. The mixed classes are by far the most orderly and hard-working. A few outsiders have made a feeble protest on the score of propriety, but I do not think they will be attended to, while the present arrangement answers so well. There are about eighty students, rather more than half women. The schools are open every day from half-past nine to five. Mr. Poynter visits each class about three times a week, and there is also an assistant master, who looks round now and then, and gives advice to the less advanced pupils. The rest of the time we are left to ourselves. A few of the students complain, but by far the greater part see that it is only by their own hard work that they can expect to improve, and that if their studies are rightly directed, it is all they need."

The Thames Embankment Question.—At the last meeting of the Board of Works the Parliamentary Committee submitted a report setting forth that they had considered the Bill introduced into the House of Commons by the Chancellor of the Exchequer, empowering the Board to purchase the land on the Thames Embankment for the sum of 40,000*l.*, or a sum to be ascertained by arbitration, and they had come to the conclusion that the Board would not be justified in paying 40,000*l.* for the land in question. With regard to the offer of arbitration, the committee thought the Board ought not to accept it, believing that the course recommended by the select committee of the House of Commons presented an equitable basis for an arrangement. The committee were of opinion that the Board might either pay an annual rental for the ground calculated on the basis suggested by the select committee; or, if it were preferred, pay the capitalised value of the rental, and thus become absolute owners of the ground. After some discussion the report was adopted.

The Society of Accountants in England. This Association has grown, and now numbers more than a hundred members of the profession, established in every part of the Kingdom. Since the inaugural meeting, held at the Cannon-street Hotel, on the 11th of January, the council have framed a series of rules and regulations. The aim of the society is to promote the complete acquisition of those branches of knowledge which are essential to the practice of an accountant, to decide upon questions of professional usage or courtesy, to advance generally the efficiency and character of members of the profession, and so to guard those public interests which are now annually committed to the skill and honour of the accountant.

The Westminster Testimonial at Chester. At the Town-hall, Chester, on Saturday, a full-length life-size portrait of the Marquis of Westminster was presented by the citizens to the Marchioness on the occasion of his lordship succeeding to the estate and title, and in recognition of the connexion which, for upwards of twenty years, has subsisted between the city and his lordship, as its representative in Parliament. The work is by Mr. J. E. Millais, R.A., who has painted his lordship in hunting costume, and about to leave Eaton-hall and mount for the chase.

State of St. Silas's Church, Bristol.—The Church of St. Silas, Bristol, has been gradually sinking ever since its erection, four years ago, at a cost of between 5,000*l.* and 6,000*l.* The building is now broken right across, and rendered quite dangerous. Practical engineers recommend that the church be pulled down, and rebuilt on a better foundation, at a cost of from 1,500*l.* to 2,000*l.*; and this will probably have to be done.—*Wilts Standard.*

Portland Drainage Competition. — We have received a letter on this subject, from Messrs. Glennie & Coke (authors of the plans marked, "Thorough"), but too late for our present issue.

The Purchase of Railways by the State. At the Inventors' Institute, St. Martin's-place, Trafalgar-square, on Tuesday night last, Mr. Raphael Brandon read a paper in which he advocated the Government management of railways. Glancing first at the difficulty of enlisting the public ear in favour of any new project, of which he adduced a succession of illustrations drawn from the history of inventions, of legislation, and of great undertakings within the past half-century, he argued that railways having become in the present day the great highways of the country, ought, as the king's highway was in the past, to be under the control and management of the State. It was indisputably detrimental to the interests of the nation that they should remain subject to the caprice of the different localities which they traverse, or to the tender mercies of companies formed purely for purposes of speculation. The transfer, he endeavoured to show, would involve no money payment, but simply a guarantee (which would not be difficult with the Government) with regard to punctual payment of dividend upon shares. In fact, it would give rise to a new Government stock much more saleable than railway shares as now constituted and dealt with. After discharging dividends, any surplus profit he proposed to apply to the general improvement of the railway system by providing sleeping and refreshment carriages, and other through traffic comforts and conveniences, and especially to providing separate sets of rails for goods traffic as distinct from passenger traffic.

Society for the Encouragement of the Fine Arts.—On Thursday evening, the 14th inst., a lecture was delivered before the members of this society, "On the Literature of Letter-writing," by Mr. T. R. S. Temple, M.A., Cantab. The chair was occupied by Dr. Doran. After giving the early history of letter-writing, the lecturer traced its gradual development from the first faint glimmerings of a good epistolary style in England down to the times of Pope, Lady Mary Wortley Montagu, Swift, Steele, Lord Lyttelton, Walpole, and Dr. Johnson. Among later writers, Sir William Jones, Burke, and Cowper, were to be commended. Owing to the cautious and practical business-like habits of our countrymen there do not exist an over and above number of love-letters. Modern authors were careless in the matter, in consequence of which their letters generally sank below, rather than rose above, the level of the best colloquial discourse. Scott, Burns, Campbell, Lord Byron, and Southey often were quoted as examples to the contrary, perhaps without much ground, although they possessed some qualities necessary to a good epistolary style. A discussion, opened by Dr. Doran, who made, as usual, some very interesting remarks, followed, in which also Dr. Altschul, Mrs. Lacy Newbery, Messrs. Gilks, Passmore Edwards, and others took part.

Ventilation and Purification in Factories. — M. Charles de Frécinet, mining engineer, was charged by the late Imperial French Government with a commission to visit the most important factories and workshops in England, France, Germany, and Belgium, and to report on the means adopted to prevent the ill effects of the various deleterious agencies on the health of the operatives. The results of this investigation were printed in four large volumes, and the *Journal of the Society of Arts* for the 15th inst. notes a few of the observations of M. de Frécinet, and especially of those which refer to foreign countries. In respect to our own country, we regret to observe, M. de Frécinet says; — "In England, the manufacturers, forming a part of the Government, and not fearing any censure, neglect to apply in their works the preventive systems adopted elsewhere." Were this true, it would be one of the most serious statements that were ever made against a nation or a Government; but M. de Frécinet is able to find "some exceptions." The value of M. de Frécinet's work lies, however, in his accounts of what has been done on the Continent, and these deserve serious study.

Bankruptcy of a "Clerical Builder."—In the London Court of Bankruptcy, on Tuesday, the case of the Rev. Henry Marchmont came on for hearing. This was an adjourned sitting for public examination. The bankrupt, a clerk in holy orders, was described as of 29, Colville-square, Notting-hill, builder. It appeared that he had engaged in extensive building speculations in the neighbourhood of Kensington Park, besides officiating as a clergyman. The judge adjourned the sitting until the 12th of June.

The East Window in Windermere Parish Church.—A paper, by Mr. Frederick Clowes, on the characteristics of this well-known window, has been read by the Rev. Canon Stock, at the Bowness Penny Readings. Mr. Clowes explained that being neither an artist nor an antiquary, he had collected together some of the views of the best artists and antiquaries who had studied the window, and gave the result Before the old window was taken down, he stated, the responsibility of the treatment of it was felt by the church restoration committee to be a very serious one, and he was able to consult on their behalf Mr. C. Knight Watson, secretary of the Antiquarian Society. It was a fortunate circumstance that this gentleman, being the grandson of the late Bishop Watson (who was buried at the east end of the church), and feeling strongly the association of his family with the old edifice, felt a great interest in the subject of the window. He at once took it up, and by his advice the work was intrusted to Mr. Henry Hughes, who has done, under the auspices of the Antiquarian Society, some important restorations of old windows.

Kimberley v. Dick.—In the Rolls Court, Chancery-lane, on the 7th inst., this case, which was partially decided in November last, again turns up. It was directed, amongst other things, that the plaintiff should make out his claims for extra work, and accordingly he, with two surveyors from London and his foreman, went to Ireland about a fortnight ago for that purpose, but Mr. Fenton, Mr. Dick's agent, refused them access to the premises, and locked up the rooms. Accordingly an application was made to the Master of the Rolls for an order to enter the premises for the above purpose, and some discussion has just taken place on the subject, in the course of which the Master of the Rolls has expressed his opinion that access must be had, with as little inconvenience to Mr. Dick as can be, but that it does not seem to be possible to do it by sections as suggested. The case, however, was adjourned without any explicit order having been given. The judge signified that the costs of the futile visit to Ireland should be paid by Mr. Dick.

Edinburgh Architectural Association.—The usual fortnightly meeting of this Association was held on the 13th inst., in the hall, No. 5, St. Andrew-square, Mr. Hippolyte J. Blanc, president, in the chair. The minutes of last meeting were read and approved, after which a paper was read by Mr. J. D. Marshall, jeweller, entitled "The Origin of the Forms of Classic Ornamentation." He traced the forms used in Greek architectural ornamentation to an Assyrian and Egyptian origin. In their first use it is probable they had a symbolic and religious meaning, but when adopted by the Greeks they became mere instruments of decoration, and in their hands assumed a peculiar elegance and beauty. The paper elicited considerable discussion, and at the close a vote of thanks was awarded to Mr. Marshall.

Proposed Brighton New Parochial Church.—A proposal for building a new church on Albion-hill is before the town. The edifice is to be known as the Church of St. Barnabas, and will be adjacent to the Home for Female Penitents. The site of the church is described as suited for the purpose. The committee are desirous that provision should be made at once for all the machinery which will be required for the proper and efficient working of an independent parish. Contributions are therefore being requested for the following objects:—1. The site, which can be purchased from the trustees of the Home for the sum of 950*l.*, which has been certified by a competent surveyor to be a fair and reasonable price. 2. The church. 3. The parsonage. 4. An endowment. It is thought that these objects cannot be accomplished for less than 10,000*l.*

Durham Courts of Justice.—Judge Mellor, in charging the jury at Durham Spring Assizes the other day, said,—"Let me congratulate you on the reconstruction of your Courts of Justice. This is the first time I have had the honour of presiding in this court since it has been reconstructed, and, as far as I can observe, it is highly creditable not only to the county, as a temple of justice, but to the architect and those persons who superintended the arrangement. Of course there are minor details on which it is impossible to pronounce an opinion until the business of the court has proceeded. You have now one of the best-arranged courts which it has been my lot to witness."

TENDERS

For completing two houses at Silverdale, Sydenham, for Mr. J. A. Bartrum:—

Bysh	£900	0	0
Rackett	880	0	0
Slatford	870	0	0
Wilson	750	0	0

For building new chapel, at Barnet. Mr. T. W. Horne, architect:—

Bracher & Son	£3,620	0	0
Wicks, Bangs, & Co.	3,550	0	0
Conder	3,525	0	0
Wood	3,500	0	0
Dove, Brothers	3,475	0	0
Scrivener & White	3,433	0	0
Adamson & Son	3,379	0	0
Higgs	3,333	0	0
High	3,100	0	0

For repairs and alterations to the Regent's Canal Iron works, Eagle Wharf-road, New North-road, Hoxton, for the Henri Rifled Barrel Company, Limited. Mr. H. A. Alexander, architect. Quantities by Mr. Henry Laxton:—

	General Works.	House and Offices.	Total.
Browne & Robinson	£769	£315	£1,084
Potter & Ferrige	—	—	1,080
W. H. & J. Mansbridge	761	290	1,051
Sawyer	640	252	892
Baxter	577	205	782

For the completion of six houses at Berrige-road, Gipsy-hill. Mr. H. A. Alexander, architect:—

Baxter	£870	0	0
Parker	800	0	0
Jeffry	632	10	0
Mundy	627	10	0
Lovejoy	625	10	0
Swain	620	0	0

For house on the Magdalen Charity Estate, Hastings. Messrs. Jeffery & Skiller, architects:—

Bridgland (accepted)	£1,300	0	0

TO CORRESPONDENTS.

H. F. K.—J. P. R.—P.—J. F.—F. S.—W. & Sons.—A. A.—W. C.—R. H.—C.—F. E. T.—E. R.—S.—J. L.—A. H.—H. E. H.—J. B.—J. H.—O.—W. H. C.—J. D.—H. M. C.—G. B. (the statement as to the moving of houses is quite correct).—"Mistress and Servant" (in type). "Barrow" (next week).—G. H.

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

Note.—The responsibility of signed articles, and papers read at public meetings, rests of course with the authors.

NOTICE TO ADVERTISERS.

GOOD FRIDAY.

"THE BUILDER," for the week ending MARCH 30th, will be published at ELEVEN a.m. on THURSDAY, 28th. Advertisements for insertion in that Number must therefore reach the Office **before THREE p.m.** *on WEDNESDAY, the 27th.*

Bath and other Building Stones of Best Quality.—RANDELL, SAUNDERS, & CO. Limited, Quarrymen and Stone Merchants. List of Prices at the Quarries and Depôts, also Cost of Transit to any part of the United Kingdom furnished on application to

Bath Stone Office, Corsham, Wilts.—[Advt.]

Ashton & Green, Slate and Slab Merchants and Quarry Agents.—Shippers, Merchants, and Contractors furnished with Price-lists of every description of ROOFING and MANUFACTURED SLATE, Railway-rates, &c. Agents for London and Country for the Sale of the celebrated WHITLAND ABBEY GREEN SLATES. Drawings and Prices of A. & G.'s RED RIDGE TILES, specially prepared for use with these Slates, on application.—Offices and Show-rooms, 14 and 15, Bury-street, St. Mary Axe, London, E.C.—[Advt.]

Turret Clocks.—Mr. Streeter, 37, Confluit-street, London, W., Manufacturer of Turret Clocks (with gravity or dead-beat escapement) for Churches and Public Buildings. Estimates and plans on application. Price:—Village clocks, from 15*l.*; church clocks, from 40*l.* The wheel-work throughout these clocks is of best hard brass or gun-metal. No iron wheels used. Timekeeping and durability guaranteed. Wholesale Entrance—Burlington Steam Works.[Advt.]

Architects, before committing themselves to any system of Warming, should send to TRUSWELL, BROTHERS, & HOLDEN, 100, Nottingham-street, Sheffield, for a prospectus of their Improved Patent Hot-Air Apparatus.[Advt.]

ART-UNION OF LONDON,

444, WEST STRAND, W.C.

Instituted 1837. 1872. Incorporated 1846.

THIRTY-SIXTH YEAR.

President.

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The Builder.

VOL. XXX.—No. 1521.

The Designs for the Law Courts.

ARE the British people really helpless as regards the public buildings to be set up at their cost and in their midst, bearing witness for centuries to the good or bad taste of the period, and aiding in raising or lowering the national taste, as the case may be? Is the selection of designs for such buildings ever to remain a matter of chance, or worse? It would seem that the reply in both cases must be in the affirmative.

In the House of Commons, last week, Mr. Cavendish Bentinck asked the Chancellor of the Exchequer whether the finally-settled designs for the new Courts of Justice were identical in all material particulars with those exhibited in the library of the House in the month of July last, and moved that, in the opinion of the House, the designs prepared by Mr. Street for the new building of the Courts of Justice were unsatisfactory, and ought not to be executed. For many years it had been considered that, inasmuch as the House of Commons voted money for the erection of large public buildings, they should have some voice as to the selection of the plans. He did not hesitate to affirm that when the eye of the House had been removed from those plans, they invariably met with disaster; and such had certainly been the case in this instance. For a year or two the matter had slept, and it was not till the session before last that his right hon. friend the member for East Sussex gave attention to the plans, when the First Commissioner stated that the foundations were being proceeded with, but gave no hint as to what architectural form the building should take. He showed that no opportunity had been afforded to the House to form a real opinion on the plans, and referred to the objections which had been widely raised to them out of doors. He agreed with those who considered the design was not what we were ambitious enough to require for Courts of Justice; and what we did require was a building, the façade of which would proclaim as intelligibly as words could, "These are the Courts of Justice."

Mr. Beresford Hope was brave enough to say that the sum total of the charges brought against the architect was, that he had first arranged his plan, and then made his Strand elevation accord with it; Sir Roundell Palmer thought it sufficient reply to objectors to say that it was quite clear no architect would ever please his brother architect,—an incorrect assertion; Lord Elcho tried to induce the erroneous impression that it was simply a struggle between the partisans of the Classical and the Gothic styles; and Mr. Ayrton, without the acuteness which usually distinguishes his observations, said Mr. Bentinck's motion was four years too late! The corollary from this last assertion is, that, to be effectual, the objection to the present unsatisfactory design should have been raised at least two years before it was produced; and that, no matter how monstrous the design might have been, the country could not now be saved from it. Mr. Bentinck's motion was ultimately withdrawn, and it was stated that contracts would be entered into some two months hence on the basis of the present design.

We reiterate, and will continue to do so, that the design for the Strand front is unsatisfactory in the highest degree, and that, if it be carried out, the result will prove a discredit and an eyesore. We will not withdraw a line of the expressions we used when the design was first made public at the end of last year: *—"The overhanging turrets at the two extremities (the details of which, moreover, are so poorly designed that they would not pass muster in a suburban villa); the overhanging pinnacles of the staircase turrets; the meanness and insufficiency of the main entrance; the ugliness of the great window; and the feeble treatment of the gable of the central hall, are amongst the weaknesses which will strike most critical observers. The great objection to the design, however, is utter want of unity, and of anything like the dignity and grandeur which should mark an important public building. The more the central portion of the design, especially, is studied, the less satisfactory it appears; and if a model of it were made, the objections would be even more strongly seen. If the end of the great hall, brought forward, were seen from bottom to top, we should have, at any rate, a central feature; but as it is, with the end of the hall some 70 ft. behind, there is here nothing but a hole, the common gabled buildings seen on each side increasing the meanness of the effect."

We have no desire to bring about an interference with Mr. Street's appointment as architect of the Law Courts. The chances of war and one or two good friends hoisted him over the decision of the judges; and although we fully agree with Mr. Lowe when he said,—"The effect of what has occurred will not only tend to throw discredit on the Government, but to put an end to the system of competitions altogether," we have no wish to interfere in this direction. What we earnestly seek to do is to obtain such a revision of at any rate the Strand front, as may give us a dignified, noble, and monumental structure, in lieu of the present conglomeration of inharmonious morsels. In Mr. Street's published account of his first design, he himself claimed that he had made all his "façades tolerably regular in their arrangement," and that he had given "a distinct centre to the south front." Where is the regularity now, and what has become of the distinct centre to the south front? They have vanished, leaving nothing but anarchy and a huge gap. As has been said before in this journal, treating of the same subject, buildings have special purposes, which, according to their dignity, require, and in unsophisticated ages seem naturally to generate, expression of like grade of dignity. A purpose so defined has its own coherency; it is itself a combination of primary and subsidiary purposes; and a balance and unity are thus its very essence. It is on this account that a structure that is apt to accommodate such a complex but still congruous purpose, will itself bear the visible impress of congruousness and subordination. In this our day at last the confused disorder of English law is being reduced to the happy regularity of a digest,—shall we choose this very day to house it in a structure only fitted to symbolise that very wilderness of obsolete craze out of which at last is proceeding our hopeful exodus?

We will not believe that this matter is settled.

* See *Builder*, vol. xxix., p. 949.

ON THE ORIGIN OF THE ELEMENT OF GRANDEUR IN THE ANTIQUE.

ALL persons possessing even the slightest claim to a cultured taste are aware of the unrivalled beauty of that which is called, *par eminence*, the antique. The charm is said to be unrivalled, indescribable, inexplicable. It attaches to certain relics of Grecian sculpture and architecture, as a perfume lingers in the petals of a rose, even after they have fallen from the plant. A great English poet, who felt this glamour, as poets instinctively appreciate the charms of Nature herself, while conscious of his own want of artistic training to analyse its elements, has well expressed a very general sentiment:—

> "I leave to learned fingers and wise hands,
> The artist, and his ape, to teach and tell
> How well his connoisseurship understands
> The graceful bend, and the voluptuous swell:
> Let these describe the indescribable!"

The idea that there is something in the beauty of Grecian art that defies analysis, is to be traced in the expressions of almost all writers on the subject. That language must fail to convey to the mind even a shadowy idea of the Athenian sculpture and architecture, may be freely admitted. But it does not follow that a systematic attempt to arrive at the elements of the grandeur and beauty that, after the lapse of two thousand years, speak in such vivid poetry to the human heart, need altogether fail of success.

There is a characteristic in human art which may be regarded as universal. It is one to which attention has been rarely, if ever, duly directed. It is independent, almost entirely, of the stage of excellence, or the degree of perfection, at which that art has arrived. As connected with the natural history of nations, and with the philosophy of human progress, it is a feature of the utmost importance. It is this,—the art of any nation, age, or separate epoch, reflects the features of that age. From the rudest caricature to the most finished portrait this similarity can be traced. In comparing the art of different eras, the phenomenon becomes strikingly manifest. It is not a mere question of fashion, of choice, or of imitation. If there be any truth in physiognomy, which is almost the same thing as saying if there be any reality in art, the reason lies far deeper. When we observe in the portraits of any of the great courtiers of the Tudor reigns a resemblance to the peculiar air and pose of King Henry VIII., we may suppose that the delicate flattery, or at all events the flattery of imitation, may account for the fact. But when a little later, as in the case of the beautiful portrait by Vandyk of the Countess de Brignolé and her son, we find the gait and attitude of bluff King Hal reproduced in the bearing of the child, we cannot thus account for the fact. If we consider that the social habits, the moral sentiments, the intellectual requirements,—all that goes to make up the national life of any given era,—find expression not only in dress and in mode, but in the very cast of countenance and characteristic attitude of the actors in the historic drama, we can understand these marked resemblances. The reigning sovereign, it may often happen, has been the very embodiment of the genius of his age,—the foam on the crest of the wave. On the other hand, at times his character has been inharmonious with that of his era, as in the case of Louis XIII., and we then fail to group the portraiture of the reign around a central royal figure. But that portraiture is none the less peculiar and expressive. If it were possible to review a series of scenes representing with photographic accuracy the history of mankind, we should not be liable to make any very material error as to date. At times we can trace the effect of some great personal impulse; at other times the movement is more that of the general mass; but at all times, and under all circumstances, among European nations, the dress, the manners, and the general appearance of society has borne an impress characteristic of the period.

A remarkable example may be taken from the long reign of Louis XIV. No monarch, since the time of Charlemagne, has been so absolutely the central figure of European civilisation. With his beautiful and impetuous youth coincided the culture of graceful and flowing locks in all polite society. As he advanced in life, and as the years of his declining age were overshadowed by the up-growth of that giant crop of evils of which he had so unsparingly sown the seeds, he failed to accept the evidences and the dignity of

age. His locks were not allowed to fade into that silver grey which is a crown of honour, but were replaced by a prodigious wig. So sacred was this adornment, that it was the only article of attire in which the king arrayed himself. It was handed into his bed, when he awoke in the morning, on the end of a stick, so that not even the eyes of the most familiar attendant should light upon the features of the poor bald old man. This wig became the characteristic of the time. Europe grew old with Louis XIV. Western civilisation became aged under his decrepit influence. The painful superstructure of Court etiquette erected by his hands, the careful systematising of personal favour, the erection of servility into a title of honour, the *petites entrées*, the *justes aux corps au brévet*, the emasculation of France by the crushing of that great aristocracy with which Louis XI. first commenced an internecine war,—all these matters, or rather the spirit that underlay them, all had a mighty influence which was felt throughout the whole of Europe. In England the reflection of the French glitter was most conspicuous. In the graceful demi-toilettes of Lely we trace one symptom of this influence. In the stilted, histrionic, bewigged figures, such as those which now frown from Temple Bar, as if with an impudent contempt of truth, and even in the imperial Roman attire in which the solid Dutch form of William III. is arrayed in his marble statue in the Bank of England, may be traced symptoms of the decadence of the Grand Monarque.

The reflection of the spirit of an age by contemporary art is less dependent than might be anticipated upon the genius of the artists of the period. That great artistic genius may affect the age is, indeed, undeniable. A great sculptor, painter, or architect may, for a time, exercise more influence on the aspect of surrounding society than even a royal or military celebrity. The taste of such an artist, when himself a highly-cultured man, will be one of the main influences felt in the formation of the general taste of his time. Pageants, dresses, equipages, and arras have been arranged, designed, and ornamented by some of the most illustrious artists, ever since the time when Vulcan wrought the shield of Achilles. The pseudo Classic taste that deformed the age of Louis Quatorze had no doubt been highly fostered by the mythological predilections of Rubens. That great portrait-painter, the equal, in his purest productions, of Vandyk, sank into a mere decorator in such work as his series of pictures for the New Palace of the Luxembourg, in which he commemmorated the marriage of Henry IV. Fat nymphs, and outrageous Tritons, form part of the *cortége* of the most Christian king. In the picture representing the disembarkation of the new queen, the sea-gods come to the front of the scene. The brilliant charms of the young Florentine princess, half astonished at her own elevation, half uncertain as to the stability of the gangway over which she is conducted; the stately submission of her attendant ladies; the eager tendance of the squires; the stern air of authority of the Grand Prior of France, Reignier de Guerchy, who leans on his *bâton* at the poop of the galley, are contrasted with an exuberance of physical development in the Nereids who aid to moor the vessel, that, to the taste of our time, is destructive of the pictorial truth, no less than of the historic value of the picture. But even in the works of this very artist, who exercised, no doubt, an abiding influence on courtly attire and habit, is to be traced the stern operation of the law to which we have referred. The king, queen, and courtiers of Rubens are the living population of his day. Philip IV. of Spain, limned by his hand, lives still upon the canvas. Habit, air, dress, all are truthful to nature, no less than features and expression. And not only so, but even in scenes illustrating Classic history, as, for instance, in the Rape of the Sabines, instead of the half savage, wholly Italian, girls, upon whom the eager youths of Romulus rushed like wolves upon their prey, we have substantial Flemish matrons or maidens, clad in silk and velvet, and calling, not too loud, on the Madonna in their exigency.

If we compare, in like manner, the works of any artist since Giotto, with what we know of the tone and habit of his day, the same truth becomes apparent. For the artist, it must be remembered, is a man subject to like passions with those by whom he is surrounded. The spirit and genius of his age speak within him, as well as seek expression at his hands. His models, the range of his experience, and thus the range of his ideas, are all circumscribed within certain limits. If he strives to ennoble his genius by the patient study of the antique, he must also dip his pencil into the fresh colours of contemporary life. If he fails to do this, he fails to be an artist of his own time. He may attempt to recall the past, and will then become simply an anachronism. This is well illustrated by the works of two artists who did study, and deeply and lovingly study, the antique. But they could not reproduce it. Andrea Mantegna, adding to study of the past, observation of the present, gave to his Roman processional triumphs a character of their own. To much of that savour of the old Imperial or Republican life that yet lingers in Italy, he added a picturesque richness and harmony unknown to the sterner sculpture of the triumphal monuments of Hadrian, or of Antoninus. He gives us a translation of Latin chronicles into the sonorous and dignified Italian of his own day. Flaxman, on the contrary, whose sketch-book, as he wandered through Italy, is not enriched by one portraiture of the ardent, graceful, enthusiastic life of the Peninsula, but who accurately copied every scrap and shred of the past, in attempting to become wholly classical, failed either to reflect the spirit of his age, or to inscribe a permanent chapter of his own in the history of art.

If the art of a period be so certainly the reflection of the contemporary life which surrounds the artist, the antique art of Greece must be the reflection of the antique life of Greece. This is the first premiss in any attempt to arrive at the elements of that grandeur which, more than any other quality, characterises the art, especially the sculpture, of the purest ages of Grecian history. The reflection is one that opens the way to clear elucidation. For we have much to enable us to contemplate, and even ideally to realise, the antique life of Greece. We have far more than *torsi* and mutilated fragments in Greek literature. The bombs that wrecked the Parthenon could not destroy the verses of Homer. Temple and tower have gone down, but Alcestis lives, almost as she did in the age of Euripides himself. It is true that of the nine great branches of the fictile, plastic, and pictorial art of the golden age of Athens, we have but few and mutilated specimens. Of the architecture, while we can restore much on paper—the sublime and overpouring effect upon the mind produced by the perfect and glittering structures, fresh from the chisel of the mason, shining in the clear atmosphere of the Mediterranean shores, and thronged by graceful youths and beautiful women, clad in garments appropriate at once to the climate and the form, can never again be experienced. Still, we can tell very much of what the genius of the architect laboured, and that successfully, to express. In painting, but one sole relic is known to exist of what we may call the easel pictures of the Greeks; the Muse of Cortona painted in a wax medium open state. To that solitary testimony may be added such argument as we can draw from the beautiful painted vases of the best age; remembering, however, that in Greece, of all places in the world, we can least judge of the perfection of high, from the condition of merely decorative, art. But it would be absurd to doubt that the works of Apelles, in their own province, were inferior to those of the other two artists distinguished by the Macedonian Conqueror as the portrayers of his own features. We know something of what was the workmanship of Lysippus; we know more of that of Pyrgoteles. For Apelles to have received the testimonies which were paid to his genius, he must have been no unworthy fellow artist of those great men.

The first characteristic, then, of the sculpture of the Greeks, is, that it reflects the life of Greece, as seen, felt, and represented, by the Greeks themselves. A second, but still important question is, what rules did the great sculptors prescribe to themselves for effecting that representation. By what law did they so regulate their labour, that they should attain the highest range of the ideal, while at the same time they steered as wide as can be possibly conceived of that capricious irregularity which lesser artists have learned to term original.

Since the pre-historic time, when man first raised his face towards heaven, no period of which we have any account, and no race of which we have any record, was distinguished by the human grandeur that characterised the golden age of Greece. The physical beauty of a beautiful Aryan race was cultivated with a care that was at once religious and political. The beautiful was the great object of contemplation and of desire—the *kalon*, the noble, and the grand, whether in moral stature, in intellectual culture, or in the physical expression of the vigour and beauty of the mind. The climate was such as to encourage the development of a beautiful race, by turns to stimulate and to soothe the natural and noble passions of the youth of the world, and to allow of just so much or so little clothing as consisted with the occupation of the hour, and with the most graceful draping of the form. Manly vigour was not only necessary, in a time when to every man's hand was entrusted the defence of his life and his honour, but was systematically cultivated, to a pitch of which modern training can give but a feeble idea, for the occasions of the great Hellenic games. We can see from the various types of manly beauty, preserved in the sculptures of Greece, that the physical education of the people was thoroughly understood, and religiously prosecuted. For each class of manly excellence there was an appropriate crown. For the slight and agile youth, the foot-race afforded at once a stimulus and a delight. For the men of more massive proportion, and more matured strength, there were the cestus, the discus, and the wrestling matches. For the cultivation of accuracy of the eye, and steadiness of nerve, as distinguished from the fury of attack, there were the chariot races. The one element of physical education which has lately received attention at our national universities, the boat-race, was not wanting. The horse-race had not then sunk into a mere means of accumulating money. The sanction of religion was appended to the celebration of the great international games; and the periods at which they recurred were so regulated as to insure a steady and deliberate training of the flower of the Grecian youth, and of all who might hope to attain Olympic or Isthmian crowns.

With all this powerful influence on the development of a manly race were blended domestic habits of like tendency. Personal purity was extreme. The bath was the first rite of hospitality offered to a guest. The temples of the gods were not to be approached by the unwashed. The monastic superstition that connects sanctity with filth would have been regarded by the Greek youth as simply blasphemous. Nor was the care of the women less enlightened. A grand majestic figure was regarded as the first, not only of feminine charms, but of feminine virtues. Aristotle quietly hints how the exercise so necessary to female health was to be insured, during periods of natural weakness, by directing the matrons to pay daily visits to the temples. The thoroughly domestic life of the Greek women, the presence and direction of queens and great ladies in all the labour of domestic service,—in baking, weaving, spinning, in training the maidens for their future position as mothers and mistresses of families,—all this tended, with irresistible force, in the same right and wise direction. Again, the rites and orders of sacrifice, as among the Hebrew people, involved the use of a nutritious diet, and the attention, as a sacred duty, to the purity and excellence of both vegetable and animal food. The golden fruit of the Hesperides—the greatest boon to the health of the Mediterranean people—was then probably only known as an exotic rarity. But scarcely less precious to human health and welfare than the olive itself, was the nutritious luxury of the fig.

This wise and unrivalled course of physical training, an object not of fancy or of chance, but of the profoundest philosophical speculation, coincided with an intellectual education of little inferior excellence. All that was then thought to be within the compass of the human mind was mapped out by wise men, and taught in famous schools. The boundaries of scientific knowledge have been enormously extended since that time, but the powers of the human mind have never been so brilliantly displayed. It is true that the culminating point of the intellectual excellence of Greece dates somewhat later than what we regard as its artistic zenith; but it is not to be expected that the highest point of excellence in all branches of culture should be simultaneously attained. Looking, not at any particular decade, but at Greece, from the days of Homer to those of Alexander, we find the noblest and grandest productions of the Aryan mind to have then and there originated. Poetry was there native,—the epic, the tragedy, the comedy, and the ode. What has any other age added? History was there born, and was characterised, in one instance, by a

religious and careful adherence to truth, and in another by a philosophical and calm treatment, that excels modern historic work as the day does the night. Eloquence then rose to a pitch never excelled, and only once rivalled. Politics, the most thorny of subjects, because in their pursuit most men seek, not what is true, but what is consonant to their tastes and passions, was reduced to something like an exact science by Aristotle,—so much so, that the surest test of accurate science, the power to predict, was exerted by that great moralist in the case of the Persian conquests of Alexander. Amid this systematic and complete intellectual training must be included those geometric rules for architecture, and for sculpture both in relief and in the round, which, being committed only to the faithful but perishable safeguard of oral tradition, are now not only lost, but not even imagined to have existed.

Nor must we allow the more clear enlightenment, or more narrow prejudice, of our own religion and morality to refuse that meed of admiration which, under widely differing circumstances, is due to the religion and morality of Greece. That the peasantry were not much more enlightened than those of Italy, of France, or of Ireland, at the present day, is extremely probable. That they regarded the exterior allegoric and poetic forms of their mythologic legends as historic narrations, is as likely as that Europe in mass still attaches a literary historic interpretation to those things as to which, in the opinion of Josephus, Moses spoke "philosophically." That they were anywhere sunk in such extreme degradation as is evinced in modern, and even in present, times, by a belief in the magic power exerted by the priesthood, there is no reason to suppose. The religion of Greece, like all early religions, shared with that of Palestine the character of being a figure for the time then present, in which were offered both gifts and sacrifices, that could not make him that did the service perfect as pertaining to the conscience. That ritual had a shadow of good things to come, and not the very image of the things. There was an esoteric as well as an exoteric doctrine. The mysteries communicated, to those only who were carefully prepared to receive them, the inner meaning of the external rite. Regarding the philosophy of the religion of Greece, and separating, as far as may be, those historic traditions of early kings, queens, and demi-gods, which became confused with the original impersonations of a magnificent celestial hierarchy (as is the case in the Romish calendar), we cannot but regard with wonder and with admiration the mode in which the noblest faculties of the heart and mind were clothed in p[illegible]e beauty, and held up as objects of imitati[illegible]. The Greek poet who spoke of the birth of Wisdom, perfect and armed, from the brain of Jove, might have used the words of the writers of the Book of Wisdom,—"*Candor est enim [illegible]tutis Dei, et imago bonitatis ejus.*" "His word runneth very swiftly," is almost a Homeric phrase as applied to the Messenger of Heaven. Whenever the Hebrew poets and prophets speak of what we call the attributes of the Divinity, they draw their language from a source that seems common also to the Greek poets. The impersonation of Iris, as the herald of a Divine mission,—the one mythologic form which it passed the power of sculpture at all worthily to represent,—may bear comparison, for its beauty, with any other legend attached to the rainbow. These physical, as well as moral, truths were enwrapped in the shadows of Olympus. The far-acting wrath of Apollo is yet to be dreaded in the sunstroke. In spite of scepticism, we are slowly rediscovering the danger of keeping exposed to the rays of the full moon. The well-inclosed quivers of the brother and sister luminaries are yet to be feared. Time would fail to enter into the minor beauties of a religious and allegoric system, which, never reduced to writing,—because it was too sacred to run the risk of divulgement,—is now regarded with the same stolid ignorance which causes a horse-laugh at the cabalistic terms of these great precursors of modern science, the alchemists. Belief in the inferiority of our ancestors is perhaps the most fatal sign of national decay, and of the degradation of race. Such, at all events, is the witness of the Hebrew faith.

It thus occurred that the artists of Greece had their imagination fired by grand and noble subjects, while they had around them objects of beauty which offered apt models for their illustration. Nor must we omit the fact that, whatever the amount of light that they possessed, the antique people were a reverent, earnest, God-fearing race. Their moral code might not be like our own; but that code had a sanction which was believed to be divine, and, in the main, that code was obeyed. We do not find men going to war on lying pretexts, and daring to invoke Divinities, every one of whose acknowledged laws they passed their lives in openly violating. No atrocities, such as render infamous the name of Philip II. can be charged against any Grecian form of faith. A tyrant who persecuted the noblest of his people, as did the fourteenth Louis, would have been held up to secular execration. A man who had plunged a people into a mad, unprepared, unprovoked war, such as that of 1870, would have been considered as pursued by avenging furies, and blinded by divine wrath. A sense of earnestness, of the truth and reality of life, of duty, enforced by divine vengeance in the infringers, and of the religious, acceptable, worthy character of the exercise of every human faculty; the gratification, within due limits, of every natural human passion; and the belief that our enjoyment of life is in itself pleasing to the Giver and Ruler of life, tended to invest the whole Greek nature with an unspeakable grandeur. Nothing would have been held more impious, in the better times of Greece, than the ascetic spirit which prescribes and cultivates the virtues of sloth, celibacy, and filth.

SANITARY LEGISLATION.

Important and well-attended meetings have been held, on the initiation of the British Medical Association, and of the Social Science Association, on the subject of the Public Health Bill, described in our last number. It was resolved to seek for an interview with Mr. Stansfeld, in order to urge upon the Government the addition to the measure before the House of eight specified items, which may be summed up in the words,—Consolidation of Sanitary Law, Unity of Sanitary Code, and Hierarchical Medical Inspection. There will be but little difference of opinion among sanitary reformers as to the importance of the objects contemplated by the resolutions. As to consolidation of law, we propose to aid its advocates by a sketch of the history and actual condition of our sanitary jurisprudence. But there is a consideration of importance no less urgent than any which they have discussed that has not yet received sufficient attention, either from the Commission, the Government, or the gentlemen who desire to amend the Bill. We refer to the engineering nature of the operations required. The medical side of the case has been well discussed; inspection, registration, and powers of entry and of removal of nuisances are essential, and are admitted so to be; but the importance of systematic organisation in the physical part of the matter is at least equal. The expenditure here to be incurred will be the heaviest part of the matter, as well as the most irreparable loss if botched and tinkered. If we have on the one hand the medical inspector, insisting on the drainage and purification of dwellings, and on the other hand some other officer, insisting on the non-pollution of streams, we shall be at a dead-lock unless we find the proper link between these two very different requisites to be duly and providently supplied by the services of the engineer.

We shall return to the subject next week.

LEAD SOIL-PIPES AND SEWER GAS.

The effect of sewer gases on lead pipes has been alluded to before now in our pages.* On this subject Dr. Andrew Fergus has submitted some statements to the Social Science Association, the pith of which we may usefully circulate:—

About fifteen years ago I first detected perforated soil-pipes. At first I merely looked upon them as a nuisance, because offensive, and did not connect them with disease; neither did I then know how these perforations were produced.

In the first pipes I inspected, as the perforations were on the upper side, I imagined that pieces of lime might have dropped down on the pipes and eaten their way through. This opinion I abandoned, as I found the perforations were from within. I also found that they were generally on the upper surface of the pipe, and that, therefore, the destruction could not be caused by fluid conveyed through it. I also observed that the pipe usually affected in this manner was the cross one, leading from the closet to the main descending soil-pipe; and that if there was a bend or arch in the pipe, the upper surface of the bend or arch would become perforated. Another element to be taken into consideration is, that these perforations are most frequently found in the upper floors of houses, and, occasionally, in the sides of the descending soil-pipes.

The question now arises, how is this destruction of good well-made lead pipes effected?

If we remember the position of this destructive action in the pipes, and take into consideration the results of chemical analysis, as well as the increased rapidity with which this action takes place in pipes that are not ventilated, I think we are justified in coming to the conclusion that these results are owing to the action of sewer-gas. Specimens show that the destructive action is from within, and that in some places the pipes are more or less corroded even where the action has not gone the length of complete perforation.

Of course, my own discovery of such pipes in houses has only been where I have been attending professionally, and where the diseases were of such a type as are known to be produced by breathing the results of the decomposition of excreta. The diseases I have observed as resulting from this state of pipes are typhoid fever, diphtheria, scarlet fever, diarrhœa, &c.; and in one or two cases I have had to order the removal of families who were suffering from ill-health from this poison, without exhibiting symptoms of any well-defined disease.

About three years ago I was asked to visit the child of the superintendent of a large public institution. I at once suspected typhoid fever, which proved to be the case. I was, moreover, told that it had twice already been in this gentleman's family; and that the year before the whole family had suffered from diphtheria. On making inquiry as to the state of the drainage, water-supply, &c., I was told that the water was Loch Katrine, and so beyond suspicion. The master of works for the institution was a most intelligent man, who had paid special attention to the drainage. He had soil-pipes with extra depth of traps, indeed the deepest I have seen, and it was difficult to account for the manner of infection, the pipes being pronounced free from any defect; but, in a short time, another child was seized, as well as several of the officials of the institution. In passing a particular spot in the superintendent's house, however, I perceived a faint odour of sewer-gas; and on mentioning this to him, he most promptly had the pipes uncovered, and perforations were at once discovered in the vertical soil-pipe.* This led to a complete overhaul of all the pipes in the house, and the removal of those that were defective; and since then I have not heard of a single case of typhoid or diphtheria in the establishment. Plumbers do not readily detect this defective state of pipes, as they look for a liquid leakage. Some time ago, in visiting a case of typhoid, I asked the mother of my patient as to the state of the closet and pipes. She replied, "Oh, Doctor, you are wrong this time; all these things were renewed only two months ago." Of course, I was extinguished; but still ventured to inquire what might be the cause of a very perceptible, and by no means agreeable, odour. A dead rat was suggested as its possible origin. However, as it was no matter to trifle with, I requested that the plumber might be sent for, and also that he should be told that the soil-pipe close to the cross-pipe was eaten away.

At my next visit, the lady told me that the plumber had been very much astonished to find the pipe exactly in the state I had predicted. Lead has generally been used as the material for soil-pipes, and as we have seen how capable it is of corrosion, it becomes a very important sanitary question, to inquire how long a good lead soil-pipe will hold out. I have been studying this question for several years, and it is now about five since I first exhibited decayed pipes in public; yet I would not wish to dogmatise on the subject, but rather give approximations, and would remark that the time will vary under the various circumstances according to the strength and rapidity of flow of the sewage, as well as the original thickness of the pipe. But after allowing for this, we must broadly distinguish between soil-pipes which are ventilated and those which are not. By the former, I mean when the pipe is carried up to the roof of the house, and open to the external air; by the latter, I

* I would by no means be understood to say that smell merely as such, produces disease; it is simply a quality of what in this case does so.

mean when the pipes are closed up. Of these last-mentioned, the duration may be stated to be about twelve years, the extremes of variation being from a minimum of eight to a maximum of twenty years.

In ventilated pipes, the duration may be stated to be nearly double, running from twenty-one to twenty-three years, the extremes of variation being from eighteen to thirty, or even more years. The practical sanitary conclusion which it concerns us all to keep in mind is, that any house, no matter how carefully or well built, may become unhealthy from this source; and that when cases of typhoid fever, diphtheria, &c., occur, the pipes should be thoroughly inspected—especially their upper surface,—and the whole of the soil-pipe uncovered.

I must strongly insist on this, as in many cases the plumbers have declared the pipes to be all right, which turned out to be very defective when uncovered. For some years back, I have insisted on a careful examination of the soil-pipes wherever I have cases of typhoid or diphtheria, and in every case where I could get this carefully carried out, I have detected these perforated pipes.

Another way in which sewer-gas may act injuriously is by its passing up the waste-pipe of the cistern, and becoming absorbed by the water. In houses that have been shut up for a few months, this should be guarded against by running off all the water, and clearing out the mud at the bottom of the cistern, before the houses are re-inhabited. I also propose to insert into the waste-pipe a long wire cage with a circular hood, and to keep this filled with sea-weed or other charcoal, which should be replenished from time to time. Of course, it would be much better if all water used for cooking or drinking were drawn direct from the main.

It would prolong the duration of the pipe, and be an important sanitary improvement, if the soil-pipes were in every case carried up to the roof, and left quite open to the air. The expense of this would be more than compensated to the landlords by the greatly-increased duration of the lead pipes.*

* In some examples that we have seen we found the soldered seam along the pipe perfect, while the lead on each side of the seam had perished.—ED.

THE NEW TOWN AND PORT OF BARROW-IN-FURNESS.

NEW WORKS AND BUILDINGS.

A FEW week ago we gave, in the columns of the *Builder*, a short descriptive notice of the cemetery now in course of construction at the new and rapidly rising town of Barrow-in-Furness, situated at the north-west corner of Lancashire, and immediately open to the sea. The rise and extraordinary expansion of Barrow is something almost fabulous, and is, perhaps, without a parallel in the history of any locality in the United Kingdom, if not, indeed, in the world. Before briefly glancing at the immense piles of buildings for manufacturing purposes, docks, shipbuilding-yards, hotels, churches, and other public and private buildings, which have already been erected, and are now in course of construction, it will give the reader some conception of the increase and expansion of this remarkable young town when we state that whereas within twenty years ago the population of the place was under 200, the inhabitants residing in a few straggling cottages, it now contains, according to the census returns of last year, a population of 76,000 souls, engaged in almost every branch of commercial and manufacturing enterprise, and with its immense docks and shipping, presents all the appearances of one of the leading seaports in England. Barrow may with truth be said to have risen, in an incredibly short space of time, from an isolated waste to a town of vast importance and wealth, where miles of new docks have been formed for the trade of a shore which only a few short years ago was washed by the tide, and there is, perhaps, no town in Britain that affords such a striking example of enterprise and engineering skill. Barrow is situated within a very few miles of old Furness Abbey, one of the finest ruins of its class in the country; and a recent writer on the wonderful rise and growth of Barrow, appropriately remarks, "Could some of the monks who were located in Furness when the Abbey was in its zenith rise, Rip Van Winkle like, to-day, they would find extensive workshops and warehouses where there were rocks and sands; docks and lines of railway where were witnessed the water's ebb and flow; steamships and crafts of all dimensions tacking to, and bringing from distant lands the produce and material which is the very existence of mankind; and the locomotive puffing along like a fiery serpent over the very ground which in their day, might have been the scene for the hunt of a wild boar or the deer, a sport much enjoyed by the denizens in Furness about the fourteenth century."

The great secret of the rise of Barrow is that it contains a magnificent bed of iron ore, and it is, doubtless, owing to this fact, in conjunction with its immediate proximity to the sea, that the town has already attained such a position and eminence as a great commercial and shipping centre. In the year 1846 a railway was opened from a place called Broughton to Dalton, and in the following year, 1847, it was extended to Barrow, to facilitate the export of the iron ore, which had hitherto been put into small crafts from a wooden pier. For many years after the formation of the railway there were very few passengers. In the year the line was commenced, the traffic was 103,768 tons, whilst in the year 1863, it amounted to 621,525 tons, of which 406,612 tons were sent to Barrow for shipment and consumption, the remainder being sent inland by rail. At this time the whole of the inhabitants of Barrow were engaged in agricultural work or in the export of the iron ore. It was in the year 1859, that Messrs. Schneider & Co. commenced the erection of blast furnaces on a site which now forms the north-western extremity of this large and enterprising town. Additional furnaces continued to be built in succession, and kept in full operation, until in 1867 there were in all eleven furnaces, which gave employment to a large number of workmen, and from this source alone the inhabitants were more than trebled. Thus it was that these iron works inaugurated, so to speak, the birth of the town, and gave the first great impetus to building operations and manufactures in the locality, leading at the same time to the formation of the magnificent docks now filled with shipping. About this time a pressing demand for pure iron throughout the country raised the price of the material to a high rate, and the result was that large steel works were erected by a company in close proximity to the iron works of Messrs. Schneider & Co., who subsequently transferred their iron works to the Steel Works Company.* The company's works which were commenced in 1865, have been considerably enlarged since they were first opened, and now cover an area of 25 acres, upon which stand huge blocks of buildings for the company's purposes. Amongst the articles manufactured are steel rails, weldless tyres, steel plates for shipbuilding, boilers, girders, iron roofs, bars, angles, guns, and forging of every description in steel; and in addition to this branch of their business, the company also supply from their own mines, the hæmatite ore and pig iron from which the steel is exclusively made. These Bessemer steel works, at Barrow, are said to be amongst the largest and most complete in the country, and their immense size and capacity may be conceived, when it is stated that they at the present moment give employment to about 3,000 workmen.

The rise and development of Barrow thus date from the great works just described; and their establishment has been followed by the laying out of long and wide streets and other thoroughfares, and the erection of numbers of manufactories of a varied character, each of which has swelled the population, and been followed by the erection of entire streets of houses, which are every day receiving additions; but notwithstanding that building is proceeding at an active rate, in order to meet the requirements of the constantly-increasing inhabitants, there is a great difficulty in procuring houses for the population, the demand being much greater than the supply; and a co-operative building society has just been formed. The town, which runs from south-east to north-west, may be said to be angular in form, and covers altogether an area of more than 2,000 acres, its greatest length, from east to west, which is at the extreme north side, being between two and three miles. The streets are well laid out, and chiefly at right angles, several of them being wide and spacious,—more especially Hindpool-road, which is one of the principal business thoroughfares in the town, and almost one mile in length. Amongst the several establishments in the town which employ a large number of hands are extensive brick-making works, extending over an area of five acres; a large ship-building yard at the west of the town, belonging to a private firm, together with another similar establishment, the property of the Furness Shipbuilding Company; whilst a third company, called the Barrow Shipbuilding Company, has just been formed. This company has purchased a large area of land at the north-west angle of the town, having a long frontage to the Walney Channel; and they are now constructing a ship-building yard and engineering works, together with a graving dock capable of accommodating the largest vessels. The company have already entered into a contract for the building of six steam-ships, of 5,000 tons burthen each, for a local steam-ship company, who are about to establish a line between Barrow and Canada. The several other premises are timber yards and steam saw-mills; then come several engine and boiler works, steam rope works, very extensive steam corn-mills, the Furness Railway Company's works, wagon works, steel-wire drawing works, and the Barrow Rolling Mills, all of which give employment to several thousands of artizans. In addition to these, what are called the Barrow Flax and Jute Works, situate at the north-west end of Hindpool-road, not far from the Hæmatic Steel Works, are just on the eve of completion. These extensive works, which occupy an area of between five and six acres in extent, will, when finished, give employment to between 2,500 and 3,000 artizans. The exterior of the building, the designs for which have been furnished by Messrs. Paley & Austen, of Lancaster, architects, presents a prominent and attractive appearance. The main front elevation is 612 ft. in length, and three stories in height, with two side elevations of the same height, and 350 ft. in length or depth. The materials used are vari-coloured bricks, and the French style of ornamental architecture has been adopted, the building resembling more that of a Government office than a factory for the spinning and weaving of jute. The machinery, engines, and boilers are on the most extensive scale, and very costly; and the entire outlay incurred in the erection of these important works, which will give employment to large numbers of women and young persons of both sexes, in addition to male adults, is estimated at upwards of 200,000*l.*

The public buildings in the town are numerous, and many of them handsome and ornamental architectural structures. The town-hall, market-place, and municipal offices are situated in a square in the centre of the town. The town-hall is not yet completed, a clock-tower requiring to be added in order to finish its architectural exterior. The interior, which is most elaborately fitted up, contains a public room, 90 ft. by 45 ft., which will hold upwards of 1,000 persons. There are also several retiring and other rooms. The municipal offices, which contain, amongst other appartements, the council chamber, is situated on one side of the square, not far from the town-hall, whilst the market-place, which is now being enlarged, is on the other side. The town can also boast of a commodious theatre, which is now being enlarged. Baths and wash-houses have also recently been erected by Mr. James Ramsden, the mayor, who has held that office for some years, and is closely identified with the growth of the borough; whilst a large and commodious working men's club has been erected by Mr. W. H. Schneider. There are several handsome churches, St. George's Church, which is a fine architectural structure in the Gothic style, having been built at the joint expense of the Dukes of Devonshire and Buccleuch, whilst another church has been erected by Mr. Schneider. There are also a large Roman Catholic church, and several Congregational churches. The hotels are very numerous, and many of them large and elegantly fitted up. Amongst the leading establishments of this character are the Burlington, the Royal, the Imperial, the Hartington, and the Devonshire, besides many others.

The spacious and magnificent docks are amongst the chief attractions which Barrow possesses, and their enormous area will be understood when it is stated that it exceeds that of the whole line of docks on the Lancashire side of the Mersey, the former being between 350 and 400 acres in extent, whilst the water area of the Liverpool docks is not more than 250 acres. The Devonshire and Buccleuch docks, which were opened in 1867, are of great size, containing respectively a water area of 30

* The title of which is the "Barrow Hæmatite Steel Company."

and 33 acres. The Devonshire Dock is 2,500 ft. long, and the Buccleuch Dock 3,000 ft., and the width of each is 750 ft.; the entrances are 60 ft. In addition to the two docks just named there are also two timber-ponds containing a water area of 105 acres; whilst the Ramsden Dock, now in course of construction, is of immense dimensions, containing a water area of 200 acres. Its extreme length is upwards of 6,000 ft., or nearly one mile and a quarter, whilst its extreme width, at the point where it is connected with the Buccleuch Dock, is 2,500 ft. The entrance from the river to this dock is 100 ft. in width, being more than sufficient to admit through its gates the largest ship of any class or character ever yet built. When this dock is completed, the entire water area of the Barrow docks will be 360 acres, whilst the wharfs adjoining them are 200 acres in extent; and extensive blocks of warehouses, four stories high, with a floor area of 17,000 square yards, abut upon them. Some thousands of workmen are engaged at the present time upon the Ramsden Dock and the timber-ponds, and the works are thus being pushed forward with great rapidity. It should be stated that at the entrance from the channel to the Devonshire and Buccleuch docks there is 25 ft. of water on the dock sill at ordinary spring-tides, and 18 ft. at neaps; whilst at the entrance to the Ramsden Dock, now in course of construction, the depth of water at ordinary spring is 31 ft., and at neaps 24 ft. The depth of water maintained in the docks is 24 ft.

Such is the present of this remarkable modern town and seaport. What will be its future it would be difficult to foretell.

THE CITY CORPORATION VACANT LANDS.

It may seem almost incredible that the unproductive vacant lands in the metropolis belonging to the Corporation represent a million and a half of money in value. It appears that in consequence of the defects in the system in use for the letting of these vacant lands by tender, and the City architect not being able to attend to them owing to his being already overworked by his general duties, a special committee of the council was appointed some time ago to consider that system and report whether any change was desirable. After investigation, the committee reported that the course pursued with regard to the letting of the lands by tender was inefficient in its working and unsatisfactory in its results, and they recommended that the several committees having charge of vacant lands should have the power of offering a commission to any person introducing a tenant, and that an officer should be appointed whose duty it would be to take charge of all vacant land belonging to the Corporation, to attend daily at the Corporation City offices, and answer any inquiries in respect of such lands, and to state the rent or price at which any site would be let. The report was adopted by the Court of Common Council, and the salary of the officer was fixed at £300*l.* per annum, and a commission of 5 per cent. on the first year's rental of all lands he might dispose of. On these conditions Mr. C. W. Thompson was appointed to the office in October last, and had since that time performed its duties; but it appears from the proceedings of the Court last week that the Improvement Committee declined to place any vacant land in Mr. Thompson's hands, notwithstanding the resolution of the Council instructing them to do so. The result was that at last week's meeting the special committee recommended to the Council that it be an instruction to the several committees to place in Mr. Thompson's hands all such vacant lands as they desired to lease. The discussion on this recommendation brought out some curious revelations as to the manner in which these vacant lands have been leased during several years past, and the loss which the Corporation have sustained under the operation of the system hitherto adopted. Mr. Isaacs, in endeavouring to show that since Mr. Thompson's appointment several sites of vacant land had been let which for years had been idle, said that amongst other cases a piece of land in Oxford-street had been placed by the City Lands Committee in Mr. Thompson's hands, and there was now a formal offer in writing for the larger half of that land of greater amount than any offer for it since 1867; and there was also an offer for the remaining half. From this fact Mr. Isaacs contended that as that land was disposable in 1867 five years had been lost in respect of it, and he urged that if it had been earlier in the hands of an officer who had an interest in its disposal by the payment of a commission, the probability was that it would have been let five years ago, and 22 per cent. of the value saved. As another instance, he stated that the Bridge House Estates Committee had placed some land in Bevis Marks in Mr. Thompson's hands, and plans were now being prepared, and an offer for it would soon be received from a large capitalist. Mr. Isaacs added that under the old system the Improvement Committee had done nothing with the Clerkenwell Improvement property, which they had had in their hands since 1868, and some of it since 1854; and that property represented in the accounts of the corporation nearly a quarter of a million of money. He strongly urged that as the value of the unproductive land belonging to the Corporation amounted to a million and a half of money, they would perceive the need for utilising it by a different process than had hitherto been pursued. Mr. Shaw, the chairman of the Improvement Committee, on the other hand, defended the old system, and was in favour of the lands being let through the architect's office, rather than through Mr. Thompson; whilst, as regarded the Clerkenwell property, it was owing to its having been in the hands of the railway, and only recently come back to the Corporation, that it had not been let. He stated incidentally that, as regarded the Holborn Improvement property, the viaduct was not opened until 1869; and that since then ground had been let producing a yearly rental of 11,000*l.* Mr. Alderman Sydney said it was most unfortunate that so large a portion of the City should be lying waste, and expressed himself in favour of offering a commission to any architect or agent whatever who brought them customers. Mr. Fowler, in supporting the recommendation of the special committee, said it was not right or proper for any committee to say they would have nothing to do with Mr. Thompson as a duly appointed officer. As an instance of what had taken place under the old system, he stated that the site of Whitecross-street Prison had been let to a gentleman who had since re-let it to a railway company, at an annual profit of 1,000*l.*; and the company stated that they had known nothing about the property, or they would have had it before. The report of the special committee was adopted, the several Committees who may have vacant lands to let being instructed to place them in Mr. Thompson's hands.

IMPROVEMENTS IN NORTHAMPTON.

The new Post-office, which has been erected in Abington-street, is about to be opened, though not quite finished. It is of the Doric order of architecture, from designs supplied from her Majesty's Office of Works. The lower part of the front elevation is of Bath stone, and the upper part of red brick, with the exception of the windows; the jambs, &c., of which are also of Bath stone, surmounted with entablatures. The building is of four stories, including the basement, which has five rooms for letter-carriers, sorters, store-room, battery-room, with coal-cellar, &c. The first floor comprises the public office, the sorting office, the telegraph office, and the postmaster's room. The public office is 38 ft. long by 18 ft. wide, and will amply provide for the requirements of the town when it becomes much larger than it is. Behind the public office, but in full view of it, is the sorting office, which is 56 ft. long by 28 ft. wide, and is fitted up with a large number of sorting places, with mahogany divisions. The telegraph office, which is to the left of the public office when entering, is 38 ft. long by 11 ft. wide, and to the right of the same office is the postmaster's room. The first and second floors contain four rooms, each with lavatories, &c., and these were originally intended for Inland Revenue offices. These offices will not, however—at present at least—be transferred to the new post-office. The ground floor is so constructed that all the operations in the office will be under the eye of the postmaster. The building has been erected by Mr. Dunkley, of Blisworth, under his own superintendence, and the constant presence of his manager, Mr. Brown. The cost, exclusive of the purchase of the premises, is about 4,000*l.*

In few towns of late years, says the local *Herald*, have greater improvements been made in the buildings and general appearance than in Northampton. Not only have villas been erected at the outskirts of the town, but large factories have been built on spots which, a few years since—in some cases only a few months since—were devoted to agricultural and horticultural purposes. Nor have the shops been behind hand, for within the last few years, not to speak of other parts of the town, where great improvements also have been going on, the appearance of "The Drapery" and Gold-street have been completely altered by the erection of shops which would be an ornament to any town. Abington-street, which has hitherto been completely stationary, has now entered upon an active career of improvement; and in addition to "The Nunnery," at the top of the street, and the new Post-office, there are signs of great progress in the shops also. Of this, the "Repository of Fine Arts," just opened by Mr. H. J. Atkins, who has removed from Gold-street, may be mentioned as an instance. It would be an oversight not to mention the new railway station in St. John's-lane. As an evidence of the progress made during the last few years, the breweries erected in Bridge-street and Commercial-street might be mentioned; but on this subject a difference of opinion to some extent prevails; as, in the estimation of some, breweries are a sign, not of progress, but of the contrary. They are considered, however, to be an addition to the architectural appearance of the town.

THE FALL OF HOUSES IN CHELSEA.

The adjourned inquest was resumed before Dr. Diplock, the coroner, on Friday the 22nd inst., at the Chelsea Workhouse. Mr. Geo. Lewis appeared for the contractor, Mr. Hill, and Mr. Newman for the tenant, Mr. Jones, as before.

Mr. Jones, in reply to the coroner, stated he never saw the contractor's foreman examine the wall in the basement. He believed there was a support under the bressummer at twelve o'clock on Thursday morning, when he left home, the day of the accident. A witness was called, who said he saw the houses fall, having previously seen all the supports knocked away. The evidence of this witness, however, could not be depended upon, as in his answers to Mr. Lewis there was a confusion in his mind between the raking shores, the dead shores under the bressummer, and those under the trimmer which was suspended to the bressummer by irons, to support the joists. This uncertainty appeared to exist in the minds of two other witnesses who were called at the previous examination to prove that all the shores were removed from under the bressummer. Three of Mr. Hill's workmen were recalled, and again swore that the centre support to the bressummer was not removed. One man said, shortly before the houses fell he remembered distinctly placing his hand on the shore to steady himself as he was looking up to speak to a fellow workman; and in reply to Mr. Lewis, one of the witnesses said "it would have been an act of madness to have removed that shore and imperilled our lives." The iron column to be placed under the centre of the bressummer was on the premises, and the men were only stopping for orders to fix it.

Mr. R. Bell was called, and said, I am the district surveyor of St. George's, Hanover-square. I have examined the house, and believe it was the giving way of the basement wall under the column in the centre of the premises, that supported the party-wall above (the portion of wall in the shop having been at an earlier time removed) that caused the accident. The doorways cut in this wall would have a tendency to weaken it. If the wall had been sound, the house would have been standing now. It was a wretchedly-built wall, and the bricks which I looked at were as clean as if no mortar had ever touched them. The bressummer put up by Mr. Hill I consider was strong enough to carry four times the load which it had to bear.

By Mr. Newman: Even if the basement-wall had been a good one, cutting the doorways would have weakened it, as it only left 9 in. of brickwork; but in a wretched wall like this, built with mortar similar to garden-mould, it was fatal. As a proof that the one column was sufficient, it is now in a perfectly sound state, and rings clear as a bell.

By the Coroner: Was it possible that the front of the house gave way, and dragged the column from its place, and so caused it to slide off the basement-wall?—Mr. Bell: No.

This concluded the evidence, and the coroner then summed up, remarking that the first point upon which there was any discrepancy was as to the notice to the district surveyor, the statements

of Mr. Jones and Mr. Wood being contradictory, and he queried whether the notice given was sufficient under the Act. Having quoted from the Act those clauses relating to the point alluded to, he said it appeared that full particulars had not been given as required. It was also a question for the jury to consider whether the bressummer put in was of sufficient strength. According to Mr. Bell, it was strong enough to carry four times the weight which was upon it. He also commented upon the discrepancies in the evidence of the two costermongers and the butcher on the one side, and Mr. Hill's workmen on the other, and also between that given by Mr. Salter and Mr. Jones. A great weight appeared to have been thrown upon the pier of the basement wall which had given way. Mr. Bell had stated that the house had yielded in the centre, and had drawn the rest in like a vortex. If they thought there had been culpable negligence on the part of those who had been engaged in altering the premises, it would amount to manslaughter; but if they considered that ordinary care had been taken, it would merely be the result of accident. If more than ordinary care had been exercised, no doubt the house would have been standing at this time.

The jury deliberated for half an hour, when their verdict was,—

"That the deceased, Chas. Freed, had been killed by accident; and they considered that Mr. Hill was deserving of censure for carrying on the work without having it examined by a competent surveyor; and that the foremen, Salter and Bradon, were also deserving of censure for undertaking duties which they were too inexperienced to discharge."

To this verdict we take one very important exception. Mr. Jones, the tenant for whom the alterations were being made, was the person who should have called in an architect to advise him as to the proposed works, and to have superintended them during their execution. When will the public see the folly of dispensing with the services of a professional man? The prevailing idea is to save his fee; but of the short-sightedness of this view there can but be one opinion, for not only does the employer have the work properly done by calling in an architect, but it is a check upon charges made by the builder. Had a competent professional man been employed in the case before us, there doubtless would have been no necessity for the inquest.

There appeared to be a wish on the part of some few of the jury to prove that all the supports were removed from under the bressummer, and that it broke, bringing down the houses with it. However, there was not the slightest reliable evidence of this: all went to show that the failure of the column in the centre of the premises was the cause of the disaster.

Mr. Hill wishes us to make it clear that he had nothing whatever to do with the party-wall, either in shop or basement, and we willingly do so.

THE LONDON CHARTERHOUSE SCHOOLS AT GODALMING.

These schools are now nearly completed, so far as the contract is concerned. In our volume for 1870, p. 567, we gave an illustration of the design, and some particulars. The architect is Mr. P. C. Hardwick, and the contractors are Messrs. Lucas, Brothers. The style is Gothic, and the stone is native bargate, with Bath stone dressings. It is intended to occupy the building in June. The school is to accommodate 160 boys. At present it consists of a series of blocks of buildings, placed at angles, and forming in their position the letter Z. The chief approach is from the Peper Harrow-road on the west, facing Hartmore, a broad drive having been constructed there. The head master's residence and school for his pupils form the north-west block; the gown or foundation boys occupy the middle of the Z, so to speak; the matron's apartments and the south-east block contain the second master's apartments and offices for other boys in the school. Thus the matron's and gown-boys' apartments are to the south-west of it.

The ground-floor contains the usual living-rooms and reception-rooms of the masters, the boys' dining-rooms, for the pupils, and other offices. The dining-room at the head-master's will accommodate sixty boys, and is 49 ft. by 21 ft. On the first and second floors are the dormitories. These are fitted up to accommodate fifty boys each. The rooms are 21 ft. wide, and each sleeping compartment is 7 ft. long, and divided from the other by a wooden partition, 8 ft. high, thus leaving a passage of 4 ft. through the apartment. The room is heated with hot water, and attention has been paid to ventilation. Adjoining the dormitories are eight studies on each floor, 6 ft. by 7 ft., which are also warmed with hot water. The floors throughout the establishment are fire-proof. The plastering is the "selenitic," of General Scott, R.E., prepared entirely by machinery; it sets firmly in about 48 or 50 hours at the most. The mortar also has been made in the same way. The bath-rooms, lavatories, kitchens, and other domestic offices are as perfect almost as it is possible for science and ingenuity to make them. Throughout the building upstairs water-closets will be used, but downstairs provision has been made for Moule's patent earth-closets to be fixed. All along the rear of the building are cloisters, with columns and arches of Bath stone, so that access can be gained from one part of the building to another without any exposure to the weather. The ceiling of the cloisters is composed of yellow deal, stained, and furnished with Gothic ribs. There will be no paint used about the woodwork in any of the compartments; all of it will be stained in this manner.

The schoolroom itself is a capacious and lofty detached edifice, being only connected by the cloisters to the main building. It is 82 ft. by 32 ft., and on either side there are three commodious class-rooms. It has an open stained timber roof, with cross-beams, key-posts, and circular ribs; and at the east and west ends there are two fine lancet-headed windows, with quatrefoils above in Bath stone.

The church is not yet commenced. It will be in the Gothic style, with traceried and stained-glass windows, and a spire about 125 ft. high. One of the chief objects in the front of the western elevation of the main building is the central tower. This is 160 ft. high. Over the entrance are oval windows in carved Bath stone, and above these are lancet-headed windows, with jambs and mullions richly carved. The whole of the tower is profuse in carved stonework, and above the lancet window is a niche, in which it is intended to put a statue of Sir Thomas Sutton, the founder of the school. The whole is surmounted by a spire, which has an ornamental finial of iron. This tower is not only ornamental, but useful, as within, it contains a tank capable of holding 7,000 gallons of water, and into which the water supply of the house will be pumped.

Ample provision has been made for an efficient water supply. A well, 175 ft. deep, has been sunk, and there is never less than 25 ft. of water in it. From the bottom of the well to the height of 40 ft., there are iron cylinders, and above that the well is bricked to the top. The water is to be pumped up by steam power, which is also available for the laundry. This latter has not yet been erected.

The whole of this work has been carried out by the contractors, who have had all the joinery work sent up from their manufactory at Lowestoft. At one time there were 420 men employed on the building. The general work is under the superintendence of Mr. Carpenter, the clerk of the works, and of Mr. Huntley, the foreman.

The grounds around the building are of great beauty, and about seventy acres in extent, from which some of the finest scenery in Surrey can be viewed. A piece of ten acres has been appropriated for a cricket-ground.

THE ROYAL HIBERNIAN ACADEMY.

The annual distribution of prizes to the successful students connected with this Academy has taken place. On this occasion there is some reason for congratulation, as commendable effort has resulted in lifting the essays on the part of the students out of the chronic rut of mediocrity, which was the distinguishing feature of the majority of former sessions.

The Government Commissioner who was sent over to assist in the awarding of the prizes has reported favourably of the progress evidenced on the last examination.

The President (Mr. Thomas A. Jones, M.R.I.A.), delivered a lecture "On the Life and Works of Raffaelle," referring to his early career, his works in the Vatican, and his early death, saying that in invention, composition, and expression, the world has unfortunately none like him, and that his works were, in fact, transcripts of his imagination; also that the technical example of his life was that in order to be successful they must begin with careful elaboration.

The bye-laws of the school need remodelling, and the hints thrown out by the Government Commissioner are to receive a careful consideration. It may not be amiss to state here that the Royal Hibernian Academy owes its foundation to the noble gift of an able architect, and the subsequent generosity of his wife, who completed her husband's intentions by an additional grant. Upwards of forty years have now passed over since its establishment and the death of its founder; yet the city he beautified and the arts he has benefited have scarcely done ought to prove their appreciation of his merits or his memory.

DANGEROUS CONDITION OF ADELPHI TERRACE.

At Bow-street, on Monday, Mr. Napier, on behalf of the Metropolitan Board of Works, applied to Mr. Vaughan for an order of removal, under the Building Act. He stated that five houses in Adelphi-terrace were in a very dangerous condition, owing to the sinking of the vaults underneath. A notice to that effect had been served upon the inhabitants, but they had not quitted their residences.

Mr. C. F. Hayward, the district surveyor, deposed to the dangerous state of the various houses, and alleged that at one of them,—No. 2,—the staircase would have fallen down, but for the shores which he had ordered to be put up.

Mr. Vaughan at once granted the order for the removal of the inhabitants.

We have had occasion to examine the houses and vaults, and fully endorse the opinion expressed by the district surveyor. Under the direction of Messrs. Scully & Wright, for the owner, Mr. Drummond, the buildings are being secured by means of strong shores; but in the vaults that were occupied difficulties were thrown in the way by the tenants, and thence the above application. Not a moment should be lost in getting the whole shored up.

We were, in the first instance, inclined to view the railway and drainage works in the Embankment as partly the cause of this disaster; but this is not altogether borne out by appearances in some of the vaults, where the failure seems rather above than below the foundation.

SCHOOL BOARDS.

Barnsley.—At an adjourned meeting of the Barnsley School Board, called partly for the purpose of selecting plans for the new schools, the members having inspected the twenty-eight sets of designs and plans sent in for the erection of a school in Park-road, among which were designs marked "Knowledge is Power," 2,060*l.*; "Alpha in the Circle," at 2,0[illegible] and "No Name," 2,100*l.*, after some discussion the design "Alpha in the Circle" was accepted. It was stated that the authors of the design were Messrs. Wade & Turner, architects, Barnsley.

Dronfield.—The Unstone School Board have appointed Mr. Rollinson, Chesterfield, architect to the Board. A requisition had been sent to Mr. Lambert, asking that the site selected by the Education Department for the erection of a set of schools at Nether Green, should be changed for one preferred by the Board opposite the railway-station at Unstone. No reply has yet been received.

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WHILE we admire the munificence of the Baroness Burdett-Coutts,—her good sense and good works,—are there not humble and not [illegible] off means within the reach of others of her sex to do good, though in a more limited degree, which in the aggregate would tell favourably towards easing a grievance that is more or less felt in middle-class society,—a class that represents perhaps the largest portion of all civilised communities?

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Ordinary schools cannot, of course, be used by those engaged in domestic service, nor are they necessary; for each household is, or ought to be, in itself a *school*, with all needful appliances at hand, and the mistress the proper guide and instructress. A well-regulated household is the right sphere for carrying on this good work, and the head of it is in no way doing her duty unless she exerts herself to correct and improve those beneath her who are thus brought into daily, almost hourly, contact with her. Subdivision of labour in all cases facilitates and perfects the work in hand, whatever it may be; so would the subdivision of instruction under these circumstances,—one teacher, one guide, daily teaching common things, and fostering a higher tone of mind; nor would it be found irksome were the importance of it once conscientiously acknowledged. Many ladies, however, may shrink from the idea of doing this, if they fancy they are being called upon to exert themselves on behalf of the low, vulgar type of domestic servant. That need not necessarily be the case. Let her first select one suited to her own position in life, leaving the rougher sort for rougher situations; then follow the course recommended. There will always be something to regulate and influence for good with the best of them, and the work will be equally useful to the community at large. Glancing at schools generally, they are found of all grades,—the village, ragged, national, cheap day and boarding, and, lastly, those of a higher and finishing character. Each of these may be represented by a single family, since there are certainly households of as many degrees: thus may the upper class be absolved from interfering with the lowest, and so be released from what may at first appear a too trying duty.

There are plenty of benevolent persons ready to be the friends and advisers of the poor; numbers visit them in the hope of rendering some service to both body and soul; in this way a sort of intimacy is established which aids them in their work: it is just this personal knowledge of each other that is required between mistress and maid; for it is chiefly through the heart that the best feelings are reached, and it is quite possible to cultivate this intimacy without encouraging an improper freedom. No one who speaks in unison with common sense and kind feeling need fear a loss of dignity or respect: it is only the ignorant, the vulgar and coarse in expression, who are likely to draw forth impertinence and contempt. Each class can show its high as well as its low type of human nature, and natural good sense is as likely to be found in the lower as in the upper orders: wherever found it will not be appealed to in vain. No one need suppose it is making any great sacrifice to do these things. Life ought not to be spent selfishly: a helping hand ought ever to be extended towards our fellow creatures; and this is one way, and a very important way, of assisting them. While doing it we improve ourselves, inasmuch as the mind is led into a train of thought that strengthens and tempers the whole character, and at the same time keeps up a habit of self-restraint and consideration for others; likewise, as we are the better for frequent and free intercourse with our superiors, so do we benefit by occasional conversation with those beneath us. Be it also remembered that, as we come into the world and share, at once, the benefit arising from the mental energy of our predecessors, the least we can do is to add our mite to the general advancement of our species; a brick or a stone added by each passing individual has been known to accomplish such results. Once more then be it urged upon every mistress: "kindly instruct and discipline your servants," so that they at length become sensible of a progress, of a step onwards in civilisation: though they may not know it by those "fine words," they are sure to feel it; and how much better for us all than discharging them and letting them again loose to disturb other households.

THE TRADES MOVEMENT.

Cambridge.—At a crowded meeting of the Building Operatives of Cambridge held at the Guildhall, it was resolved "that a deputation of six from the united body be appointed, asking for a conference with an equal number of the Master Builders' Association, to confer upon the the basis of our circulars; and that the following be the deputation:—Messrs. J. H. Cooke and F. Burwick (carpenters), F. Lowings and R. Ison (bricklayers), and W. Scott and W. Cook (labourers)."

Middlesbrough.—An adjourned meeting of operative house-painters has been held to consider the reply of the masters to their demands for 6½d. per hour and nine hours per day, overtime to be paid 7½d. per hour. Of fourteen masters eleven conceded all these demands, one merely objecting to payment of overtime till after 8 p.m., and another declining to pay any overtime at all. A vote of thanks was passed to the masters who had made unqualified concession, and a hope expressed that the others would follow their example, the men pledging themselves to work no overtime for those who did not.

Shrewsbury.—A considerable number of men connected with different branches of the building trade have turned out, in compliance with a resolution passed at a meeting held during the earlier part of the week. Another meeting of the men was held; and they seemed unanimous in their determination not to resume work until the nine-hours system has been adopted. A committee was appointed to meet the masters should they express a wish to communicate with the men.

Chicago.—Mr. John D. Prior, General Secretary to the Amalgamated Society of Carpenters and Joiners, Manchester, thus writes:—"I find

of Mr. Jones and Mr. Wood being contradictory, and he queried whether the notice given was sufficient under the Act. Having quoted from the Act those clauses relating to the point alluded to, he said it appeared that full particulars had not been given as required. It was also a question for the jury to consider whether the bressummer put in was of sufficient strength. According to Mr. Bell, it was strong enough to carry four times the weight which was upon it. He also commented upon the discrepancies in the evidence of the two costermongers and the butcher on the one side, and Mr. Hill's workmen on the other, and also between that given by Mr. Salter and Mr. Jones. A great weight appeared to have been thrown upon the pier of the basement wall which had given way. Mr. Bell had stated that the house had yielded in the centre, and had drawn the rest in like a vortex. If they thought there had been culpable negligence on the part of those who had been engaged in altering the premises, it would amount to manslaughter; but if they considered that ordinary care had been taken, it would merely be the result of accident. If more than ordinary care had been exercised, no doubt the house would have been standing at this time.

The jury deliberated for half an hour, when their verdict was,—

"That the deceased, Chas. Freed, had been killed by accident; and they considered that Mr. Hill was deserving of censure for carrying on the work without having it examined by a competent surveyor; and that the foremen, Salter and Bradon, were also deserving of censure for undertaking duties which they were too inexperienced to discharge."

To this verdict we take one very important exception. Mr. Jones, the tenant for whom the alterations were being made, was the person who should have called in an architect to advise him as to the proposed works, and to have superintended them during their execution. When will the public see the folly of dispensing with the services of a professional man? The prevailing idea is to save his fee; but of the shortsightedness of this view there can but be one opinion, for not only does the employer have the work properly done by calling in an architect, but it is a check upon charges made by the builder. Had a competent professional man been employed in the case before us, there doubtless would have been no necessity for the inquest.

There appeared to be a wish on the part of some few of the jury to prove that all the supports were removed from under the bressummer, and that it broke, bringing down the houses with it. However, there was not the slightest reliable evidence of this: all went to show that the failure of the column in the centre of the premises was the cause of the disaster.

Mr. Hill wishes us to make it clear that he had nothing whatever to do with the party-wall, either in shop or basement, and we willingly do so.

THE LONDON CHARTERHOUSE SCHOOLS AT GODALMING.

These schools are now nearly completed, so far as the contract is concerned. In our volume for 1870, p. 567, we gave an illustration of the design, and some particulars. The architect is Mr. P. C. Hardwick, and the contractors are Messrs. Lucas, Brothers. The style is Gothic, and the stone is native bargate, with Bath stone dressings. It is intended to occupy the building in June. The school is to accommodate 160 boys. At present it consists of a series of blocks of buildings, placed at angles, and forming in their position the letter Z. The chief approach is from the Peper Harrow-road on the west, facing Hartmore, a broad drive having been constructed there. The head master's residence and school for his pupils form the north-west block; the gown or foundation boys occupy the middle of the Z, so to speak; the matron's apartments and the south-east block contain the second master's apartments and offices for other boys in the school. Thus the matron's and gown-boys' apartments are to the south-west of it.

The ground-floor contains the usual living-rooms and reception-rooms of the masters, the boys' dining-rooms, for the pupils, and other offices. The dining-room at the head-master's will accommodate sixty boys, and is 49 ft. by 21 ft. On the first and second floors are the dormitories. These are fitted up to accommodate fifty boys each. The rooms are 21 ft. wide, and each sleeping compartment is 7 ft. long, and divided from the other by a wooden partition, 8 ft. high, thus leaving a passage of 4 ft. through the apartment. The room is heated with hot water, and attention has been paid to ventilation. Adjoining the dormitories are eight studies on each floor, 6 ft. by 7 ft., which are also warmed with hot water. The floors throughout the establishment are fire-proof. The plastering is the "selenitic," of General Scott, R.E., prepared entirely by machinery; it sets firmly in about 48 or 50 hours at the most. The mortar also has been made in the same way. The bath-rooms, lavatories, kitchens, and other domestic offices are as perfect almost as it is possible for science and ingenuity to make them. Throughout the building upstairs water-closets will be used, but downstairs provision has been made for Moule's patent earth-closets to be fixed. All along the rear of the building are cloisters, with columns and arches of Bath stone, so that access can be gained from one part of the building to another without any exposure to the weather. The ceiling of the cloisters is composed of yellow deal, stained, and furnished with Gothic ribs. There will be no paint used about the woodwork in any of the compartments; all of it will be stained in this manner.

The schoolroom itself is a capacious and lofty detached edifice, being only connected by the cloisters to the main building. It is 82 ft. by 32 ft., and on either side there are three commodious class-rooms. It has an open stained timber roof, with cross-beams, key-posts, and circular ribs; and at the east and west ends there are two fine lancet-headed windows, with quatrefoils above in Bath stone.

The church is not yet commenced. It will be in the Gothic style, with traceried and stained-glass windows, and a spire about 125 ft. high. One of the chief objects in the front of the western elevation of the main building is the central tower. This is 160 ft. high. Over the entrance are oval windows in carved Bath stone, and above these are lancet-headed windows, with jambs and mullions richly carved. The whole of the tower is profuse in carved stonework, and above the lancet windows is a niche, in which it is intended to put a statue of Sir Thomas Sutton, the founder of the school. The whole is surmounted by a spire, which has an ornamental finial of iron. This tower is not only ornamental, but useful, as within, it contains a tank capable of holding 7,000 gallons of water, and into which the water supply of the house will be pumped.

Ample provision has been made for an efficient water supply. A well, 175 ft. deep, has been sunk, and there is never less than 25 ft. of water in it. From the bottom of the well to the height of 40 ft., there are iron cylinders, and above that the well is bricked to the top. The water is to be pumped up by steam power, which is also available for the laundry. This latter has not yet been erected.

The whole of this work has been carried out by the contractors, who have had all the joinery work sent up from their manufactory at Lowestoft. At one time there were 420 men employed on the building. The general work is under the superintendence of Mr. Carpenter, the clerk of the works, and of Mr. Huntley, the foreman.

The grounds around the building are of great beauty, and about seventy acres in extent, from which some of the finest scenery in Surrey can be viewed. A piece of ten acres has been appropriated for a cricket-ground.

THE ROYAL HIBERNIAN ACADEMY.

The annual distribution of prizes to the successful students connected with this Academy has taken place. On this occasion there is some reason for congratulation, as commendable effort has resulted in lifting the essays on the part of the students out of the chronic rut of mediocrity, which was the distinguishing feature of the majority of former sessions.

The Government Commissioner who was sent over to assist in the awarding of the prizes has reported favourably of the progress evidenced on the last examination.

The President (Mr. Thomas A. Jones, M.R.I.A.), delivered a lecture "On the Life and Works of Raffaelle," referring to his early career, his works in the Vatican, and his early death, saying that in invention, composition, and expression, the world has unfortunately none like him, and that his works were, in fact, transcripts of his imagination; also that the technical example of his life was that in order to be successful they must begin with careful elaboration.

The bye-laws of the school need remodelling, and the hints thrown out by the Government Commissioner are to receive a careful consideration. It may not be amiss to state here that the Royal Hibernian Academy owes its foundation to the noble gift of an able architect, and the subsequent generosity of his wife, who completed her husband's intentions by an additional grant. Upwards of forty years have now passed over since its establishment and the death of its founder; yet the city he beautified and the arts he has benefited have scarcely done ought to prove their appreciation of his merits or his memory.

DANGEROUS CONDITION OF ADELPHI TERRACE.

At Bow-street, on Monday, Mr. Napier, on behalf of the Metropolitan Board of Works, applied to Mr. Vaughan for an order of removal, under the Building Act. He stated that five houses in Adelphi-terrace were in a very dangerous condition, owing to the sinking of the vaults underneath. A notice to that effect had been served upon the inhabitants, but they had not quitted their residences.

Mr. C. F. Hayward, the district surveyor, deposed to the dangerous state of the various houses, and alleged that at one of them,—No. 2,—the staircase would have fallen down, but for the shores which he had ordered to be put up.

Mr. Vaughan at once granted the order for the removal of the inhabitants.

We have had occasion to examine the houses and vaults, and fully endorse the opinion expressed by the district surveyor. Under the direction of Messrs. Scully & Wright, for the owner, Mr. Drummond, the buildings are being secured by means of strong shores; but in the vaults that were occupied difficulties were thrown in the way by the tenants, and thence the above application. Not a moment should be lost in getting the whole shored up.

We were, in the first instance, inclined to view the railway and drainage works in the Embankment as partly the cause of this disaster; but this is not altogether borne out by appearances in some of the vaults, where the failure seems rather above than below the foundation.

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It is not necessary to be rich to do good, though riches go far, if well dispensed, towards accomplishing good upon an extensive scale, as we have of late years been fortunate enough to witness. Great and grand effects occur in nature, which produce sudden and vast changes in the physical condition of the globe; so likewise do important results arise, though more slowly, from long-continued insignificant causes, each in its way equally desirable for the provision and well-being of the human race, one of the noblest of whose characteristics is to take into consideration the welfare and prosperity of succeeding generations.

The Legislature has now taken up the subject of education, and of improving the social and industrial condition of the working classes. The "street Arabs" and "gutter children" even will probably not be long without their guides and instructors; but there is a class afloat that seems to be *let alone*, to steer its course in the best way it can without such advantages, and this class is represented by the ordinary domestic servant, such as fills that capacity in families where only one or two are kept,—and a very large number of young women and girls are thus employed. Taken as a whole, what a disturbing cause they are permitted to be; and whose fault is it? Not entirely their own, most certainly, for some blame at least is attached to those who employ them, and who are supposed to possess better balanced minds, resulting from the advantage of a better training and education, and who could, if they would take the trouble, really do much towards improving their habits and character. As, however, there are some we cannot improve, so also are there mistresses who can do no good to their servants; but these are few compared with those who can, in some degree, benefit and instruct.

Ordinary schools cannot, of course, be used by those engaged in domestic service, nor are they necessary; for each household is, or ought to be, in itself a *school*, with all needful appliances at hand, and the mistress the proper guide and instructress. A well-regulated household is the right sphere for carrying on this good work, and the head of it is in no way doing her duty unless she exerts herself to correct and improve those beneath her who are thus brought into daily, almost hourly, contact with her. Subdivision of labour in all cases facilitates and perfects the work in hand, whatever it may be; so would the subdivision of instruction under these circumstances,—one teacher, one guide, daily teaching common things, and fostering a higher tone of mind; nor would it be found irksome were the importance of it once conscientiously acknowledged. Many ladies, however, may shrink from the idea of doing this, if they fancy they are being called upon to exert themselves on behalf of the low, vulgar type of domestic servant. That need not necessarily be the case. Let her first select one suited to her own position in life, leaving the rougher sort for rougher situations; then follow the course recommended. There will always be something to regulate and influence for good with the best of them, and the work will be equally useful to the community at large. Glancing at schools generally, they are found of all grades,—the village, ragged, national, cheap day and boarding, and, lastly, those of a higher and finishing character. Each of these may be represented by a single family, since there are certainly households of as many degrees: thus may the upper class be absolved from interfering with the lowest, and so be released from what may at first appear a too trying duty.

There are plenty of benevolent persons ready to be the friends and advisers of the poor; numbers visit them in the hope of rendering some service to both body and soul; in this way a sort of intimacy is established which aids them in their work: it is just this personal knowledge of each other that is required between mistress and maid; for it is chiefly through the heart that the best feelings are reached, and it is quite possible to cultivate this intimacy without encouraging an improper freedom. No one who speaks in unison with common sense and kind feeling need fear a loss of dignity or respect: it is only the ignorant, the vulgar and coarse in expression, who are likely to draw forth impertinence and contempt. Each class can show its high as well as its low type of human nature, and natural good sense is as likely to be found in the lower as in the upper orders: wherever found it will not be appealed to in vain. No one need suppose it is making any great sacrifice to do these things. Life ought not to be spent selfishly: a helping hand ought ever to be extended towards our fellow creatures; and this is one way, and a very important way, of assisting them. While doing it we improve ourselves, inasmuch as the mind is led into a train of thought that strengthens and tempers the whole character, and at the same time keeps up a habit of self-restraint and consideration for others; likewise, as we are the better for frequent and free intercourse with our superiors, so do we benefit by occasional conversation with those beneath us. Be it also remembered that, as we come into the world and share, at once, the benefit arising from the mental energy of our predecessors, the least we can do is to add our mite to the general advancement of our species; a brick or a stone added by each passing individual has been known to accomplish such results. Once more then be it urged upon every mistress: "kindly instruct and discipline your servants," so that they at length become sensible of a progress, of a step onwards in civilisation: though they may not know it by those "fine words," they are sure to feel it; and how much better for us all than discharging them and letting them again loose to disturb other households.

THE TRADES MOVEMENT.

Cambridge.—At a crowded meeting of the Building Operatives of Cambridge held at the Guildhall, it was resolved "that a deputation of six from the united body be appointed, asking for a conference with an equal number of the Master Builders' Association, to confer upon the the basis of our circulars; and that the following be the deputation:—Messrs. J. H. Cooke and F. Burwick (carpenters), F. Lowings and R. Ison (bricklayers), and W. Scott and W. Cook (labourers)."

Middlesbrough.—An adjourned meeting of operative house-painters has been held to consider the reply of the masters to their demands for 6½d. per hour and nine hours per day, overtime to be paid 7½d. per hour. Of fourteen masters eleven conceded all these demands, one merely objecting to payment of overtime till after 8 p.m., and another declining to pay any overtime at all. A vote of thanks was passed to the masters who had made unqualified concession, and a hope expressed that the others would follow their example, the men pledging themselves to work no overtime for those who did not.

Shrewsbury.—A considerable number of men connected with different branches of the building trade have turned out, in compliance with a resolution passed at a meeting held during the earlier part of the week. Another meeting of the men was held; and they seemed unanimous in their determination not to resume work until the nine-hours system has been adopted. A committee was appointed to meet the masters should they express a wish to communicate with the men.

Chicago.—Mr. John D. Prior, General Secretary to the Amalgamated Society of Carpenters and Joiners, Manchester, thus writes:—"I find

that large numbers of building operatives are at the present time leaving this country for Chicago under the impression that there is a great demand for labour in that city, and that skilled artizans are receiving from five to seven dollars per day. It may, perhaps, be interesting to some of your readers to know that I have just received a letter from the secretary of our Chicago Branch, who informs me that trade in that city is very dull, that the supply of carpenters and joiners is more than equal to the demand, and that the rate of wages at present is from two to three dollars per day."

Workmen's Revolt.—The men employed in Messrs. Rothschild's mines at Wittkowitz, in Moravia, broke out recently in revolt, and did various acts of plunder and destruction, owing, it is reported, to a delay in the payment of wages. The disturbance was quelled by military, after four of the rioters had been killed, 50 wounded, and about 100 taken prisoners. Workmen's strikes with us are tame affairs compared with this; and think of Rothschild not paying up his workmen's wages!

THE NEW ESTATE OFFICES, HUDDERSFIELD.

In connexion with the view and particulars of these new buildings, in Huddersfield, given in our last issue, we are asked to add the names of the various contractors and others engaged in the execution of the works, and willingly comply. They included Messrs. Ben Graham, mason; James Christie, carpenter and joiner; James Walsh & Son, of Halifax, plumbers and glaziers; E. J. Goodwin, Brothers, slaters; D. Sunnercliffe & Sons, plasterers; Knight & Jackson, painters; Minton, Hollins, & Co., Stoke-on-Trent, tilers, encaustic; Hodkinson & Co., of Coventry, Mediæval iron-work and gasfittings; Longdon & Co., of Sheffield, grates; Fisher & Dyson, of Huddersfield, marble chimney-pieces; T. Outhwaite, of London, marble chimney-pieces for club and estate offices; Geo. Jennings, the closet and lavatory fittings; R. Dennett, fireproof floors; H. Brook, ironfounder; and Farmer & Brindley, carvers. Mr. Rd. Phillips was clerk of works.

CONCRETE AND BREAKWATERS.

We have frequently had to comment on the great difficulty and expense of building and keeping in repair the breakwaters on our fishery harbours on the northern coasts. It is not long ago since nearly 40,000*l.* were actually flung into the sea at the harbour of Anstruther, a town on the Fifeshire coast, of a small and insignificant fishing population, in trying to provide a safe harbour. The harbour at Wick has also been another rock of offence in this light. But it seems at length that the northern engineers have adopted a material capable of resisting the tidal action and the ravages of storms. Glancing at the report of the British Fisheries Society regarding the Wick Breakwater, we find that it states that the breakwater has been exposed recently to two very severe south-easterly gales, and has sustained some damage; but the concrete blocks at the extreme end of the works have not been injured, and this appears to show *that solid cemented masses will resist the force of the waves better than the best masonry, however large the stones, and however strongly they may be bound together.* The directors propose to repair and strengthen the erection up to the point it has already reached. Before proceeding further seawards, it will be necessary to obtain additiona funds, and they think it is advisable to suspend operations for a year in order that the stability of the work may be thoroughly tested.

The reports of Messrs. Stevenson, the engineers, are appended to that of the directors, and one states, *inter alia* (the last, dated 5th March, 1872), that the breakwater has sustained damage during the last gales, when, for a period of about twenty days, with little intermission, the work was exposed to the impact of waves about 30 ft. high, and which, on striking the work, projected the spray to the height of about 200 ft. The damage is confined to the portion of the work built without the parapet. The number of stones fractured is not great, but it shows the excessively intense force of the sea on this part of the work, which struck the breakwater with such force as to fracture blocks of the same density as granite, and having a strength three times greater than that of Craigleith stone,—a fact unparalleled in the history of sea works. They are of opinion that, if left exposed, the sea will ultimately make a breach in the wall by shattering the stones, and think the directors should, if possible, arrange, in preference to extending the work next season, to deposit blocks of cement rubble of 80 to 100 tons weight outside of the wall, which would not only protect the wall itself, but tend to tranquillise the water inside of the harbour. They estimate the cost of depositing concrete blocks in front of the outer portion of the breakwater, which is most exposed, at about 8,000*l.*

THE METROPOLITAN WATER SUPPLY.

In a summary of Dr. Frankland's analytical examinations of the waters supplied by the eight metropolitan companies, he contributes to the annual report of the Registrar-General some valuable remarks upon the London water supply in 1871. The daily supply to London is now about 107 millions of gallons. Of this 20 millions are "good wholesome water from wells and springs in the chalk," and 87 millions are "more or less impure water derived from polluted rivers." The Chelsea and Lambeth companies draw their supplies from the Thames after it has received the polluted Mole and the sewage of 600,000 people, including the filth of Oxford, Reading, and Windsor. The West Middlesex, Southwark, and Grand Junction companies draw their water from the Thames above the junction with the Mole, but after it has received the sewage of the three above-mentioned towns, as well as of smaller places. The East London Company takes its supply of water from the Lea, below the sewer outfalls of Luton, Hertford, and Ware. The Lea, however, is less polluted than the Thames, and Dr. Frankland remarks that it is to be "regretted that the East London Company have just spent about 500,000*l.* in conveying water from the Thames to their works in the Lea Valley." This new source of supply will probably come into use in the current year, when "a considerable deterioration in the quality of the water supplied by the company may be looked for." The New River Company draws rather more than half its supply from chalk wells, and the rest from the River Lea above the sewer outfalls of Hertford and Ware, but below those of Luton, Whitwell, and Welwyn. The Kent Company is the only one of the metropolitan companies which draws its entire supply from chalk wells, and does not distribute any water from polluted rivers; "this water is uniformly excellent for drinking and all domestic purposes, but is too hard for washing." As the Kent water is drawn entirely from deep chalk wells, it is not filtered before delivery, and the natural filtration it receives through the chalk is so superior to the best artificial filtration, that this company's water has never for several years past shown any signs of turbidity. The Chelsea and Lambeth companies, however, "periodically deliver water so muddy as to be entirely unfit, on this account alone, for domestic use." Living organisms were found during 1871 in most of the turbid samples delivered by each of the companies drawing their supplies from the Thames, excepting only the West Middlesex, which on all occasions sent out well-filtered water.

SCHOOLS OF ART AND SCIENCE.

The Lambeth School of Art.—The distribution of prizes to this successful institution has been made by Canon Gregory, at the school, Miller's-lane, Upper Kennington-lane. Miss Agnes Schenk was awarded the gold medal for design for lace, and also received the Prince of Wales's scholarship of 25*l.* The silver medallists were Miss Alice Parkess, for a head from life; Mr. Arthur Barlow, for a model from the antique; and Mr. Tom Hunt, for a life study. There were seven bronze medals, and numerous other prizes, including books, money, and several useful articles. Canon Gregory sketched the eighteen years' history of the academy, from its modest origin, with which he was personally connected, to its present useful and large proportions. The aim of its founders and existing managers was to render the teaching a practical adjunct to the iron and pottery industries of the district. This was the first occasion of the pupils being able to display beautiful objects of pottery art of their own conception and workmanship, a result due in great measure to the liberality of Mr. Henry Doulton, and the zeal, taste, and ability of Mr. Sparks, the head master. Owing to the rebuilding and enlargement of the premises, he appealed to the overflowing audience to contribute something towards wiping off a debt of 300*l.* this extension had left unpaid. Mr. Tom Taylor, after the distribution, recited an address upon Art, taking for his leading theme the street decorations of the recent Thanksgiving Day. Speculating upon the unfavourable impression they must have produced upon the minds of the youthful Japanese sent over to study our habits, tastes, and institutions, and who were in St. Paul's on the day, he thought they must have said to themselves this could not be the England of 500 years ago, of which they had read, or the country that set so high a value upon the beautiful productions of their own Japan. In this strain he reasoned, contending that the art taste of the nation had degenerated, but argued that institutions of this kind were destined to restore correct notions, amongst the people, of the picturesque.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.

Mr. T. Gilks delivered a lecture before this Society on Thursday evening in last week upon "Thomas Bewick, and the Revival of Wood Engraving in England;" Mr. J. A. Houston, R.S.A., in the chair. There was an exhibition of chiaroscuros by Baptiste Jackson and Goltius, some large Dürer cuts, some choice large cuts by Bewick, five different portraits of him, and most of his works. Mr. Gilks began by a retrospective glance at the low state of the art in England anterior to Bewick. The lecturer then spoke of his birth, education, love of art, and apprenticeship, and alluded to his first cuts, his visit to London in 1776, and the few persons he found then practising the art. Mr. Gilks laid great stress upon Bewick's intense love of nature. He also drew an analogy between Michelangelo, who was called "the master of live stone," and Bewick, who certainly was a "master of live wood;" and he urged that not even Dürer or Holbein had so faithfully interpreted nature as Bewick. Mr. Gilks referred to Landseer's "Life and Letters of W. Bewick," and the light it shed upon the engraver's estimation by the literary world. The lecturer critically examined Bewick's *modus operandi*, and showed how he attained superior results to the modern mode. A discussion ensued, in which Messrs. J. G. Waller, T. Reed, Palmer, Saddler, Captain Britton, the Chairman, and the Hon. Secretary, took part.

THE ROYAL ALBERT HALL.

His Royal Highness the Duke of Edinburgh presided at the first meeting of the Corporation, on Monday last, in the East Lecture Theatre of the establishment, when the draft constitution was submitted, and, after a few alterations, adopted. The Duke made an excellent address, giving the history of the undertaking, and an account of its present position. General Scott read a report from the Provisional Committee, which was also adopted: all the proceedings were characterised by great unanimity. About a hundred members of the corporation were present.

JEBEL EL KUMRI.

Sir, — May I be permitted to say that this word Kumri, which you seek to ally with our aboriginal Welshmen, is only a form of the common Arabic word for moon; thus, Jebel el Kamar is the moon-mountain, called lyus, in the plural, the mountains of the moon; the well-known backbone of Central Africa.

The Welsh word for "moon" is *lleuad*: cf. Latin *luna*. Had our Cymreig really retained so important a word from a supposed Semitic ancestry, we should find a more striking similarity between Welsh and Arabic than is now apparent. A. Hall.

*** Mr. A. Hall is no doubt quite correct in his Arabic, but we made no attempt whatever to show, or even to hint at, anything like either an *Arabic* or an *Arabian* origin of the people of Cumberland, of which district we were speaking; or of those of Wales either. Our argument pointed to *Africa*; and the only question here would be, whether the word Kumri, applied by natives to African mountains, may not be connected with some ancient African language, as well as have, in another form, a meaning in Arabic. "Kumri" and "Cymry" *are* "closely akin."

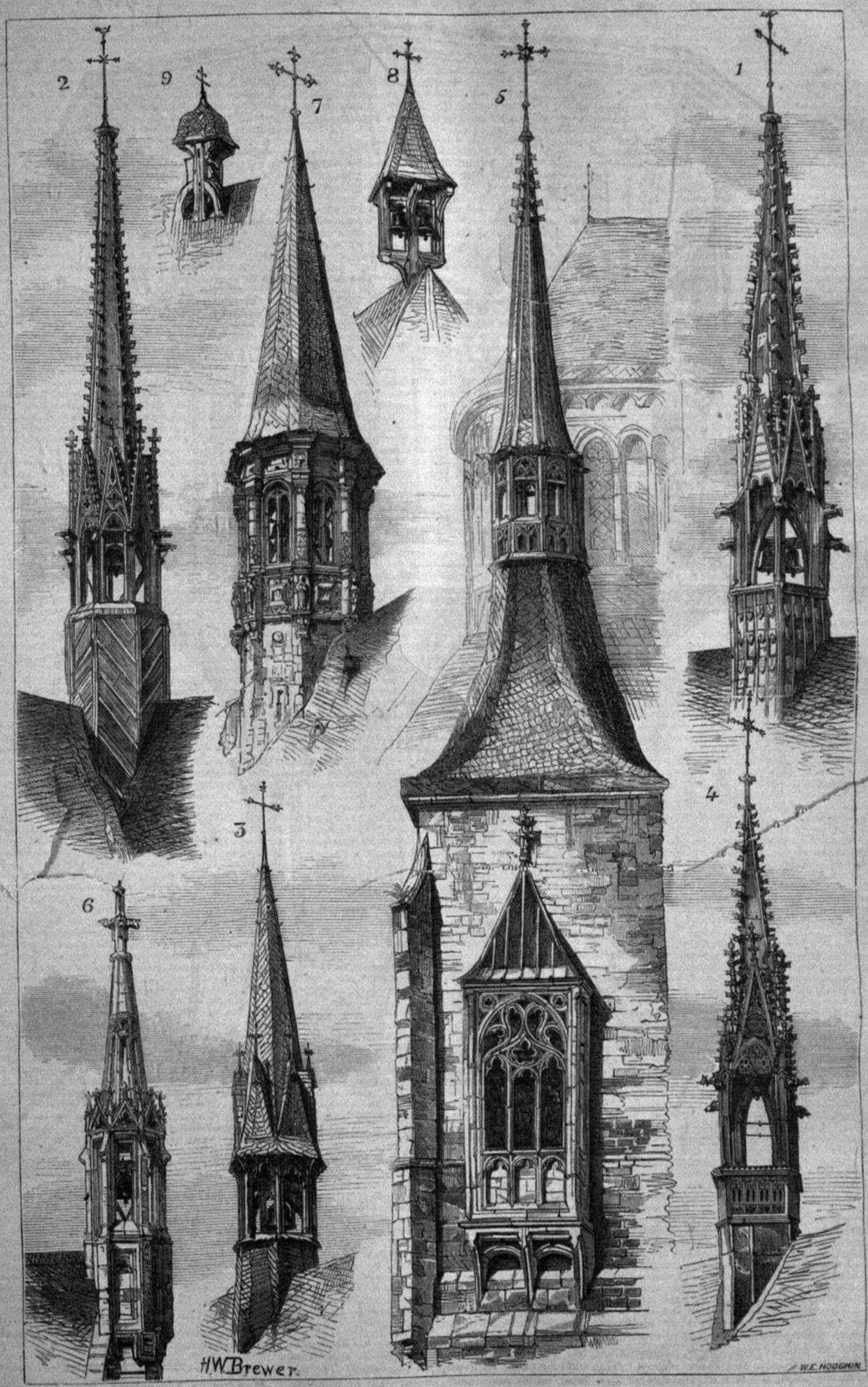
PULPIT, HOLBEACH CHURCH.

Designed by Mr. Christian, Architect; executed by Mr. J. Forsyth.

HOLBEACH PULPIT.

This pulpit, recently placed in Holbeach Church, as a memorial, is executed principally in oak; but its architectural effect is heightened by a mixture of teak and other woods. The height of the pulpit is 6 ft. 6 in., and it is octagon in form. Each segment of the octagon (excepting the one for the entrance) contains canopied panels, which form the setting for the figures, those being seven in number. The figures represent, in the order of their position, Moses, Abraham, Elijah, our Lord, St. John, St. Paul, and St. Simeon, and are all carved in oak from models made expressly for this work. On the base, under each figure, appear their appropriate emblems. These figures, together with much richness in ornamental and moulded detail, produce an imposing effect. The cost was nearly 300*l*. Mr. E. Christian was the architect (under whose superintendence the church has been restored), and Mr. J. Forsyth the sculptor.

Honour to Literature.—The Metropolitan Board of Works have decided to rename Oakley-square, Chelsea, and to call it henceforward, "Carlyle-square."



FLÈCHES: GERMANY.

FLÈCHES.

THE "Flèche," for which we have no English name, unless "spirelet" may be used, forms a most graceful and interesting feature in Continental Gothic architecture, and it is a singular circumstance that the ancient architects of this country should never have introduced it. In their smaller churches they seem always to have preferred using the bell-gable, and in their larger cruciform churches the central tower is almost universally to be found. Probably, however, Westminster Abbey had a flèche before Sir C. Wren added the present stump of a central tower which disfigures that building; and it is known that there was one at Beverley Minster before the existing abomination was erected over the "crossing" of that beautiful church.

A flèche of large dimensions exists at Southwold Church, in Suffolk, and the "louvres" over our dining-halls partake of the character of this feature, but all the ancient English examples, and they are very few, seem to be clumsy and ungraceful in their outline, and quite wanting in the elegance and grace of the Continental ones.

Flèches appear to have first come into use in the thirteenth century, and a few examples of that date are to be met with in France. In the fourteenth century they were of such frequent use that nearly every church in Germany of that date seems to have possessed one. The examples we give, from the Minorite Church at Cologne (fig. 1), from St. Michael's Church, Bamberg (fig. 2), the Kloster-Kirche at Cassel (fig. 3), and the Chapel of the Town-hall at Cologne (fig. 4), are all of this date, as are also those of the cathedrals at Münster and Halberstadt, and the churches of St. Andrew at Hildesheim and of the Franciscans at Limburg-on-the-Lahn. In fact, most of the churches erected by the mendicant orders of this date possess this feature, as their rules did not permit them to erect towers. During the fifteenth and sixteenth centuries flèches continued to be used, and examples of the fifteenth century are often exceedingly elegant and beautiful. Those of St. Maria in Capitol at Cologne (fig. 5), and St. Mary in Tahl at Rothenburg (fig. 6) are of this date. The latter is of stone, and bracketed out from the western gable. The flèche of the interesting and beautiful convent of Himmelspforte, near Wurzburg, is a charming example of the latter part of the sixteenth century (fig. 7).

The spiral portion of this example is of wood covered with slate, but the rest of it is of red stone, and it is carried down through the church to the ground. The arrangement internally is singular, but very picturesque. It occurs just over the centre of the nave of the church, and not between the nave and the chancel, which is the usual position for a flèche. The portion of the nave to the west of this flèche is raised upon a crypt, that between the flèche and chancel is consequently 12 ft. or 14 ft. lower than the western portion. The part of the nave which is raised is used as a choir for the "religious," and the basement of the flèche combines with a kind of rood-screen, separating this from the eastern portion of the nave, which is used by the secular inhabitants of the convent, who are thus stationed between the choir and the chancel of the church. The lower portion of the flèche, *i.e.*, that part of it which rises from the floor of the church, contains a staircase communicating with the choir of the "Religious" and the crypt below. This singular and interesting church is of various dates. The crypt under the nave (we call it a crypt, although it is entirely above ground) and the south doorway are "First Pointed" work. The chancel, which is small and square-ended, is "Second Pointed"; and the nave is "Third Pointed." The flèche and gables are of the latter part of the sixteenth century. There is another flèche of the same date, and equally picturesque, though smaller than the one we have described, over the refectory of this interesting convent.

The little flèche or bell-cot represented in fig. 8 is from the chapel of a small convent at Amberg, in Bavaria: it is probably a work of the sixteenth century; and that represented in fig. 9 is from the western end of the Cathedral of Limburg-on-the-Lahn, and dates from the seventeenth century.

All these examples, except figs. 6 and 7, are constructed of wood. The example from the Minorite Church at Cologne (fig. 1) is entirely covered with lead, and the crockets are beaten out in that metal. The basement is adorned in a peculiar manner with a number of small shields.

The example from St. Michael's, at Bamberg, is also entirely covered with lead. The example from Cassel (fig. 3) has its spire and base covered with small slates, whereas the wood is left exposed in the open portion of the flèche. Fig. 4, from the town-hall at Cologne, is entirely covered with lead, and is exceedingly elaborate. Fig. 5, from St. Maria zu Capitol, Cologne, has the upper portion of its spire covered with lead, the lower portion of the spire with slate, the open portion covered with lead, and the base, which is in the form of a spire, covered with slate. Below this flèche is a pretty little stone oriel window, forming internally the receptacle for a small altar. The whole of this flèche has been recently restored, and apparently with considerable care.

In figs. 8 and 9 the roofs alone are covered with slate, the timber being left exposed in their lower portions.

THE DARLINGTON FEVER HOSPITAL COMPETITION.

SIR,—As you are always ready to expose injustice, I will, in as few words as possible, recount the *grossest* case that I have ever met with in the course of my professional career.

The Town Council of Darlington invited the local architects to compete for two premiums for an infectious hospital. Five of them complied. Four of the designs being (as you and most of your readers will, of course, expect *all* would be) on the "Pavilion plan," but varying, no doubt, in merit as to carrying it out; the fifth is, however, on the old long-abandoned "ward plan," with windows only at one side and one end, and a window about 3 ft. square, into a narrow passage. And will you believe me, sir, when I assure you it is a positive fact that although you, as well as Miss Nightingale and others, have explained and advocated the pavilion principle for years, so that a complete revolution has been effected in hospital construction, the Hospital Committee actually selected this "ward" plan as "*the best*;" and although asked by the other competitors to call in you, or some other "expert" on the subject, before making their report to the council, refused to do so, but sent in their report, which was almost as a matter of form adopted, only one voice being lifted up in favour of a skilled and impartial adjudicator, and in vain?

The most painful part of the affair is, that at the meeting of the committee who practically selected the designs, of the three members besides the mayor present, two of them are the partners in business, and one of them a "client," and considered to be a decided partisan, of the architect whose design they selected as the best.

It is perfectly certain that the Government officer who has to approve the plans of hospitals built with public money will not approve the design, but the committee of partners took good care not to make any stipulation as to that in awarding the premiums: only get their friend appointed architect, and he can, with the aid of the other designs, probably make a fresh design to pass.

Can you conceive a more cruel case of injustice to the other competitors? And can you, with your great experience, suggest a remedy, or must they "grin and bear it?"

"ONE WHO LIKES FAIR PLAY."

ARCHITECTURAL ASSOCIATION.

THE visit of the members, on Saturday afternoon, the 16th inst., was paid to the new buildings for the learned societies, now in course of erection on the old courtyard of Burlington House, at the present time roofed in, the scaffolding removed from it, and the masonry of the upper stories cleaned down, and preparations are being made for beginning the internal plastering.

At the ordinary fortnightly meeting, held on Friday evening, the 22nd, thanks were voted to Messrs. Banks & Barry, the architects, for the opportunity of visiting their building. A paper was then read, by Mr. G. H. Birch, "On Christian Iconography," which he defined, for the purpose of his paper, as the regulation of the representation of holy things by paintings, statues, glass and wall decorations in Christian churches, and their appendages; advocating, 1. The employment of the arts to teach the people as well as to decorate sacred buildings,—a principle largely acted on aforetime, though in more modern times fallen into some disuse. Also, 2. The application to the different divisions of churches of a set system of decoration, the reference in paintings, sculpture, &c., only to subjects having a special and peculiar suitability to the parts and their ordinary uses. Basing his remarks on the information conveyed in a single view in M. Didron's well-known "Manuel d'Iconographie Chrétienne, Grecque et Latine;" and instancing examples from England and the Continent of the traditional treatment of the various walls, windows, and fittings; Mr. Birch proceeded to indicate what seemed to him the method of applying the same to modern needs. Recommending most strongly the devotion of the north sides of all churches uniformly to the history of the older world, and of the southern sides to history since the appearance of the founder of the Christian faith; also, among other matters, censuring the use of holy symbols in floors, and the introduction of memorial windows filled with delineation of modern buildings or of portraits and personal traits. He also pointed out what seemed to him the unlimited field for able work if thorough schemes of church completion became the rule instead of the exception; though all the work should be sober and dignified, he did not consider there was any need to resort to archaic drawing to obtain that repose and character. Treated at first hand with all the freshness of true talent, the old subjects of Christian art may take a continual newness from the artist's hand, even though he works within the trammels of traditional iconography. In the discussion which followed, some stress was laid on the necessity for real interest in the subjects depicted, in order that they may be permanently of value; and doubts were expressed as to the possibility of direct didactic result from any art, or, of the real usefulness and high character of art produced under mere prompting. Notice was also taken of the avoidance of modern subjects in churches, an undesirable exclusion, as the speaker seemed to think, of a portion of the world's history that ought to be interesting above all others to moderns; and the possibility of attaining completeness and interest with but little reference to tradition was hinted at.

EXCAVATIONS IN ROME.

WILL you permit me to take advantage of the wide circulation of your paper to make known to my numerous friends in England and the subscribers to the Roman Exploration Fund, that I have this day been through the subterranean passage from the vestibule of the great ancient Mamertine Prison (commonly called the Prison of St. Peter), under the Church of the Crucifixion, near the Arch of Septimius Severus, and the principal chambers of that prison called the Lautumiae, now cellars under the houses in the Via di Marforio and the Vicolo del Ghettarello? This passage is 80 yards long, nearly 2 high, and 1 wide, and the construction as well as that of the prison is of the large blocks of tufa, usually called in Rome the walls of the kings, the same as that of the earliest part of the Cloaca Maxima. The excavation of this passage has been a tedious, difficult, and expensive work, and I hope it will be duly appreciated by the subscribers. It clearly settles another long disputed question among scholars, and demonstrates that this is the prison in the middle of the City, mentioned by Livy as made in the time of Ancus Martius (A. U. C. 121; B. C. 632. Livii Hist., lib. i., c. 33). All the disputed points in the historical topography of Rome might be settled and demonstrated in the same manner, if the necessary funds were forthcoming. I have had plans and sections made of this, and shall have them published as soon as possible and sent to the subscribers.

JOHN HENRY PARKER, C.B.

DOMESTIC ARCHITECTURE AND THE ART SCHOOLS.

AT a meeting of the South Kensington District Schools last week, Sir Coutts Lindsay, who distributed the prizes gained by the students, said he had been asked by Mr. Cole to suggest anything he thought needful with regard to the schools, and he had mentioned the subject of domestic architecture. He proposed to offer a prize of 5*l.* to the student who should produce the best design for a dwelling-house to be erected on a given plot of ground in town or country. He also proposed to give a prize of 5*l.* for the best study, executed in marble, from a design from the antique. It might be but a part of a

figure," for probably a whole figure would be found to be too costly as regarded the material. He would also give a prize of 5*l.* for the best understood and most gracefully arranged drapery copied from life; not to be elaborately finished, but to be sketched so as to serve, if needful, for elaboration afterwards; we had many such sketches by Raffaelle, from which one who understood drapery could readily see how that master had intended that the details should be filled in. He thought that a number of draperies should be provided for the school, and that the students should study them placed upon one another, and variously arranged.

NEW RAILWAY STATION AND RE-ARRANGEMENTS, LOUGHBOROUGH-ROAD.

The works now going forward in connexion with the loop line of railway from the main line of the London, Chatham, and Dover Company to the Crystal Palace High-level line, involve a very important reconstruction of the Loughborough-road station arrangements. The present booking-offices and station at Loughborough-road are very inconvenient and altogether inadequate to the traffic, the only accommodation for passengers being under two of the company's arches, whilst the approaches to the railway platforms are still more unsatisfactory. On the completion and opening of the Crystal Palace Junction, a great improvement will take place in this respect. The directors have resolved altogether to close the present booking-offices and approaches, and to erect a large and commodious new station on the street level, on a plot of ground fronting Coldharbour-lane. The exact site of the new station will be in the fork between the main line and the new junction line to the Crystal Palace, now in course of construction.

ST. MARY WOOLNOTH.

Sir,—There are rumours afloat that the existence of Hawksmoor's noble church, St. Mary Woolnoth (admirably situated at the corner of Lombard-street), is included under the London Churches Act.

I am sure it is only necessary to state this fact to secure the co-operation of all who care for the old architecture of England, in a rally for its preservation. The works of Hawksmoor are not so many that we can afford to lose so excellent a specimen of an artist in whose hands the modified Italian of Wren assumed a peculiar character of dignified picturesqueness. Vigil.

*** We fully agree with the expression of our correspondent, and hope to be speedily assured that no such disaster as the destruction of this building will be allowed to occur.

METROPOLITAN BOARD OF WORKS AND DISTRICT SURVEYORS.

At the usual weekly meeting of the Board of Works on the 22nd, Mr. H. L. Taylor wished to ask the Superintending Architect whether Mr. Power, the district surveyor of the southern district, was entitled to charge 10s. 6d. each for inspecting the parapets and roofs of their buildings in Ludgate-hill before Thanksgiving Day. He wanted to know if the district surveyor was entitled to make this charge for buildings not inspected.

The Superintending Architect said that the district surveyors were directed by order of the Board to make an inspection of roofs and parapet walls, and he believed that was on the motion of Mr. Fowler.

Mr. Elt said he seconded the motion, and that all that was required was that notices should be served upon the householders, drawing their attention to means being taken for their security.

The subject then dropped.

GLASS AND GLASS PAINTING, SOCIETY OF ARTS.

The next course of Cantor Lectures to be delivered on Monday evenings, commencing on the 8th of April, will treat of Glass and Glass Painting, as the following heads show:—

Lecture I.—On Silicon, Silica, and compound of these with other substances—Fluorine, &c. Lecture II.—Solvents of Silicic Acid—Silicates—Glass (composition of)—Different Kinds of Glass—Methods of Making Glass. Lecture III.—Manufacture of Glass (continued)—Coloured Glasses—Glass Staining—Glass as a Decorative Material—Glass Painting. Lecture IV.—Glass Painting (continued)—Mosaics—Enamels. Lecture V.—Styles of Glass Painting—Illustrations with the Electric Light, illustrative of the Nature of Colour. Lecture VI.—Silicates as Painting Vehicles, and some other of their Useful Applications in the Arts.

Every member has the privilege of introducing two friends to each lecture.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At the Ordinary Meeting, held on the 18th of March, the paper read was,—"On the Fall of the Brick Dome of the Koltovskoïe Church, at St. Petersburg; with an Account of its Construction, and the Theory proposed for the Safe Erection of such Structures: being a Communication from M. Bernhard, Architect, of St. Petersburg," by Mr. Wyatt Papworth.

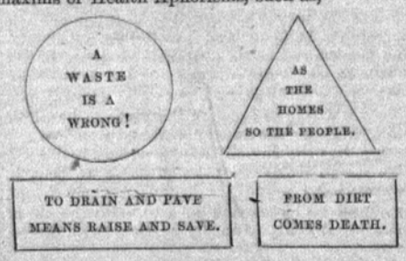
The following have been elected as honorary and corresponding members:—Mons. Espérandieu, of Marseilles; Il Cavaliere Guiseppe Fiorelli, of Naples; Il Cavaliere Antonio Cipolla, of Rome; Il Cavaliere Enrico Alvino, of Naples; Il Cavaliere Pietro Rosa, of Rome.

On the recommendation of the council with regard to the nomination of new members, it has been resolved that,—

"The Nomination Paper must be accompanied by a separate written statement by the applicant as to his professional education in the case of Associates, and as to his professional education and works in the case of Fellows; and by another written statement by one of the three Fellows who have signed the Nomination Paper, giving particulars of his acquaintance with the candidate in the case of Associates, and of his acquaintance with the candidate and his works in the case of Fellows."

HEALTH APHORISMS.

Sir,—I in common with some other "women workers" in a densely-populated neighbourhood, take charge of a class in the Sunday School; and it has occurred to me to suggest through your columns that, as well as the present beautiful Scripture mottoes which we distribute to the children on cards and other pictorial illustrations, we could at the same time do much good by a similar dispersion of some of your sanitary maxims or Health Aphorisms, such as,—



A suggestion from your able pen might so influence the administrative department of the Religious Tract Societies that they would be induced to print these. Priscilla.

EXPENDITURE ON THE NATIONAL GALLERIES AND MUSEUMS.

A return has been furnished to the House of Lords, on the motion of Lord Overstone, as to the sums expended on the following public galleries and museums:—

National Gallery.—1. Total amount expended on account of purchases from the date of its commencement to the present time, 337,195*l.* 9s. 10d.; 2. Total amount expended during the same period on account of annual cost of the establishment and other outgoings, 133,384*l.* 11s.; 3. Total amount expended on building account, 102,490*l.* 1s. 8d. Note.—The amount of 7,014*l.* 6s. 9d. was received by sale of catalogues to March 31st, 1871, and paid over to her Majesty's Exchequer.

South Kensington Museum.—1. Total amount expended on account of purchases, from the date of its commencement, in 1853, to the present time (March 31st, 1871), 308,697*l.* 2s. 7d.; 2. Total amount expended during the same period on account of annual cost of the establishment and other outgoings (including schools of science and art), 1,133,617*l.* 19s. 2d.; 3. Total amount expended on building account, 231,740*l.* 5s. 9d.

National Portrait Gallery.—1. Total amount expended on account of purchases, from the date of its commencement to the present time (March 31st, 1871), 14,483*l.* 7s. 3d.; 2. Total amount expended during the same period on account of annual cost of the establishment and other outgoings, 11,395*l.* 4s. 9d.; 3. Total amount expended on building account (including rent), 4,320*l.* 4s. 2d.

British Museum.—1. Total amount expended on account of purchases and acquisitions (including the amount expended in excavations) from the commencement of the year 1824 to the present time (March 31st, 1871), 778,814*l.* 5s. 11d.; 2. Total amount expended during the same period on account of annual cost of the establishment and other outgoings, 1,643,786*l.* 12s. 4½d.; 3. Total amount expended on building account, including furniture, fittings, and architects' commission, from Michaelmas, 1823 (when new buildings were commenced), to the 31st March, 1871, 1,299,068*l.* 5s. 1d.

MARBLES FOR THE NATIONAL GALLERIES.

Sir,—Having given estimates to several builders for the marble work to be put up at the National Gallery, our prices being for Belgian Black and Genoa green, may we be permitted to remark, on behalf of ourselves and others who have estimated for the same, that we think that it would be unfair to us were any estimate for Irish marbles accepted, the difference in price being so considerable as to make our prices appear extremely high to those who do not understand the difference between the marbles; and we are also doubtful if Irish green could be obtained the size required, viz., 13 ft. 9 in. long, 20 in. diameter each, in one stone, and certainly in colour it would be greatly inferior to the Genoa green.

As other marble merchants may have given estimates for Irish green and black marbles to the same builders to whom we have given our estimates according to the specification, it is likely to add to our prejudice and do us injury, unless it is shown that there is a great difference in the price of the different marbles.

J. W. Bird & Co.

*** We have received three other letters on this subject, but must refer the writers to the architect.

TUNNEL UNDER THE CHANNEL.

Sir,—As the subject of effecting an improved communication between England and the Continent by means of a tunnel is occupying considerable attention just now, I think it would be well that the most practicable site should be selected. To my mind the line proposed by Mr. G. Remington from Dungeness to Cape Grisnez is the best, for by it the chalk formation which is so porous would be entirely avoided, and the works would be carried through the Wealden, containing beds of strong clay and other impervious strata.

This line has the advantage of starting from a low level, and therefore the level required under the Channel would be more readily attained, the approaches could be in open cutting, and the tunnel would not exceed twenty-six miles in length. Following this route, the shoal in mid-channel affords great facilities for sinking an intermediate shaft, so that only half the time would be required than if driven from shore to shore.

The Dungeness line would shorten the distance between London and Paris, and would afford greater facilities for uniting with all the existing railways, and would therefore give the public greater accommodation.

That to insist upon the idea of tunnelling through the chalk, when such strata as the wealden are so near at hand, appears to me to be a great engineering mistake, as it must be evident that the amount of 30,000*l.*, or any other amount for proposed works could be laid out to better advantage if employed on works at Dungeness.

I think that the secretary of the company has, in his letter published in your paper of the 9th March, come to erroneous conclusions when he refers to collieries and lead mines under the sea, as the strata through which these works are carried are not chalk, but generally compact and impervious.

It seems to me, therefore, that the Dungeness line is the proper one to follow, and that the works may be carried out with the certainty of success. J. H.

THE INNS OF COURT HOTEL.

The Inns of Court Hotel in Holborn, which, since its erection, has been extensively used by members of the legal profession, is, nevertheless, now in liquidation, and has just been disposed of by public auction, at the Mart, Tokenhouse-yard, by Messrs. Norton, Twist, & Watney, the sale including the unfinished building in Lincoln's-inn-fields, and the whole covering half an acre of freehold land. The upset price of the property was 48,550*l.* There was a very numerous attendance, and a spirited competition for the property took place. It was ultimately knocked down at 52,700*l.* to Mr. Henry Allbutt, who, it is understood, has purchased it on behalf of the Midland Land Corporation of Birmingham. The previous bidder was Mr. Tewson, of the firm of Debenham, Tewson, & Farmer, who offered 52,600*l.* on behalf of a client. It is a matter of surprise that the property did not realise a higher sum when, according to the statement of the auctioneer, the amount at which it was knocked down is only slightly in excess of the cost of the site.

PORTLAND DRAINAGE COMPETITION.

Sir,—In your impression of the 9th inst. "An Engineer" inquires what has become of the above competition, and complains that he has been unable to get any information about it since the plans were sent in.

We imagine that he is not singular in this respect, and that it will be found that the competitors have been left almost entirely to gather their information as best they could from the local newspapers or from private sources.

In this manner we are enabled to give him and others whom it may concern the following history of the case.

Six sets of plans were sent in, and a notice of them with the various estimates appeared in the local papers, and also in the *Builder*,—the estimates, however, being in some instances incorrectly given. The plans were subsequently on view at the Royal Hotel, Fortune's Well, for a week.

The Local Board being unable to decide for themselves as to the merits of the different schemes, determined to call in professional assistance, and ultimately appointed an architect of Weymouth to report on them.

His report was received at a meeting of the Local Board on 16th November, the local papers giving a full account of the meeting and a summary of the report, in which the competitors were placed in the following order:—"Thorough," "Sero ac Spero," "Faire mon devoir," "Sanitas No. 1," "Experience," "Sanitas No. 2;" and the Board proceeded to award the first premium of 40*l.* to "Thorough," and the second, of 20*l.*, to "Experience." The envelopes containing the names of the competitors were, however, left unopened.

At a meeting of the Board on 18th December, during a discussion as to carrying out part of the drainage of Fortune's Well, it was proposed that they should have a proper surveyor to superintend the works. This seems to have been decided on at a subsequent meeting, for in the local papers of 6th January an advertisement appeared for a "Drainage Surveyor," to superintend the carrying out of certain drainage works, "and to perform all the duties connected with and pertaining to the office of surveyor to the Portland district under the Local Government Act 1858." "Salary about 100*l.* a-year."

We immediately wrote to the clerk to the Board asking if the Board intended ignoring the competitors, and carrying out the works themselves, and received answer that neither of the plans was what the Board would wish carried out, and that their present surveyor being incapable of drawing a plan, they felt they required a superior person where there was so much to do.

As this was not very explicit, we sent a letter to the Board (timed so as to arrive with the applications for office of surveyor) putting forward our claim to carry out the works, on the ground of our plans having been awarded the first premium, and the instructions issued to competitors stating that the claims of those gentlemen whose plans, &c. were chosen should have "the Board's favourable consideration." We also offered to attend the Board to explain the details of our plans and to give any other information that might be required.

No notice was taken of this letter; but in the local papers of 27th January appeared an account of a meeting of the Local Board (probably 17th January), at which several applications for the office of surveyor were received. Our letter is not mentioned, but a letter from "Experience," in his own name, is given in full, offering to carry out his own plan at a salary of 150*l.* for twelve months, and, after a discussion, he was appointed surveyor to the Board, subject to his agreeing to undertake the duties set out in the advertisement, and to his plans being approved by the Local Government Board.

We at once protested against the course adopted by the Board in appointing the second premium competitor to carry out the drainage works at a higher salary than that named in the advertisement, without giving us the opportunity of submitting our terms.

Our letter was considered at a Board meeting on 8th February, and on the 16th we received answer that the Board had decided not to carry out either of the plans sent in by competitors; that the plans by "Experience" were most in accordance with the recommendations of Mr. Harrison, who conducted the inquiry instituted by the Local Government Board, but that our plans as a whole were considered the most complete and elaborated.

The newspaper report of the meeting, however, states that a letter from "Experience," accepting the offer of the Board, was approved of, and, with regard to sending his plans to the Local Government Board, the meeting was adjourned to give an opportunity of communicating with him as to various alterations required. At the adjourned meeting on 12th February a resolution was passed that no alterations should be made in the plans until the next general meeting.

We have since written to ask whether the letter we received from the Board or the newspaper report is to be taken as correct, as we considered them at variance, but we have as yet received no answer.

The above we believe is a correct outline of the history of the case down to the present time,—any comment upon it we think would be superfluous.

WALTER H. GLENNIE,
W. LANGTON COKE,
Authors of the Plans, &c. marked "Thorough."

FROM SCOTLAND.

Edinburgh.—The subscription towards the restoration of St. Giles's Church, though as yet only promoted in a private way, has reached the sum of 1,900*l.*, being nearly two-thirds of the amount required for the first stage of the undertaking,—that is to say, the renovation of the High Church. The committee are having specifications prepared, with a view to obtain estimates for the work, which is intended to be commenced immediately after the General Assembly's meeting in May. When the choir of the old cathedral shall have thus been restored to a proper condition, says the *Scotsman*, the committee will direct their attention to other parts of the building. The portion occupied by Trinity College congregation will probably be vacated at no distant date, on the completion of the new church in Jeffery-street. This portion, accordingly, will next fall to be dealt with in accordance with a general plan for opening up the entire building, of which the restoration of the choir, now arranged for, is to be regarded as the first instalment. In course of time, we may hope to see the Metropolitan Cathedral cleared of its present disfigurements.

Wick.—One of the recent additions made to the architecture of Pulteney-town is a new shop, says the *John O'Groat's Journal*, which has just been opened by Messrs. Gow & Sons, merchants, at the junction of Dempster-street and the South-road, and opposite Thurso-street. The building is of dressed freestone, and has four front windows of plate glass, 9 ft. by 6 ft. The interior accommodation and fittings are complete. The building plans were furnished by Mr. J. Ross, Inverness, and Mr. J. J. Harper of this town. The mason work was done by Messrs. Gow & Sinclair, builders; and the joiner work by Mr. John Bain, jun.,—the whole having been done under the immediate direction of Messrs. Gow & Sons, for whom the work was performed. The walls are lined with wood, varnished, thus giving a clean and airy appearance to the interior. A villa which is being erected in the new street which has been opened off the South-road, opposite the Episcopal Chapel, is nearly finished; and the new Pulteney-town Free Church Manse will be forthwith commenced in the same street.

Deskford.—A new church, according to the *Elgin Courant*, has been opened for divine service at Deskford. The old church overlooks the Deskford Burn; the new one is built about a quarter of a mile farther west, and close to the turnpike road between Cullen and Keith. The Earl of Seafield is the only proprietor in the parish, and has built the new church at a cost of about 1,000*l.* There is accommodation for 500 persons. The style of the building is Pointed Gothic. It is surrounded with a walled-in shrubbery, and stands east and west. The façade is to the west. Over the entrance-door, of Mediæval form, there is a two-light window, with tracery above it. On each side of this window is a lancet one, and the façade is surmounted with a belfry and bell, the first in keeping with the architecture beneath it. In what may be called the imitation transepts on each side of the church there are three-light windows, with different tracery above them from that in the one over the door. The other side windows are single lancet ones, all in diamond panes. The vestry stands at the east end of the church. The gallery in the west end is high above the ground-floor, supported on ornamental pillars. The architect was Mr. John Miller, Cullen House, the architect on the estate; the mason, Mr. Wm. Bennett, Cullen; the carpenters were Messrs. J. & W. Duffus; and the slater was Mr. Alex. Desson.

SCHOOL-BUILDING NEWS.

Hull.—The foundation-stone of a boys' school in connexion with St. Paul's Church has been laid. The site is on the north side of the vicarage, and has been presented by Mr. Liddell. The edifice will consist of two main schools and two class-rooms, and are capable of accommodating 390 boys. The main front is to be towards St. Paul's-street, and immediately adjoining the vicarage. The building is designed after an early type of Mediæval architecture to harmonise with the church, school, and vicarage already erected, and is to be executed in red brickwork, with Yorkshire stone dressings. It will have an open-timbered roof, and be plastered internally. The work has been let by competition to Mr. Barrett, of Hull; the architect being Mr. Samuel Musgrave.

Reigate.—The new boys' school at St. Matthew's, Redhill, has been opened by the Bishop of Winchester. The new building has been erected, under contract, by Mr. Carruthers, from designs gratuitously furnished by Mr. Hesketh, of the Mount, Redhill. The new building, standing as it does behind the girls' school, and consequently almost hidden from view, can scarcely be said to be an additional architectural ornament to the town. The site was gratuitously presented by the Rev. H. Brass, and the situation is convenient. The school itself has cost 1,000*l.*, but another 150*l.* have been expended in putting the girls' school in thorough repair, whilst other necessary expenses for drainage, fencing, warming apparatus, &c., have brought the total expenditure up to 1,400*l.*, of which sum about 100*l.* have yet to be raised.

Shaftesbury.—Schools in connexion with the Church of England are about to be built in the parish of St. James, Shaftesbury, to afford accommodation for ninety boys and girls (mixed) and eighty-five infants respectively. The architect is Mr. James Soppitt, of Shaftesbury.

Tisbury.—A school is about to be built in this parish, to accommodate ninety-two infants. The architect is Mr. James Soppit, of Shaftesbury.

Llanfoist. — The foundation-stone of new schools about to be erected at Llanfoist, near Abergavenny, has been laid. At the foot of the gigantic Blorange Mountain stands the little village, and within a few hundred yards of the parish church, now crumbling in decay, it is proposed to erect the new school buildings, which will consequently stand on a considerable eminence, overlooking the town of Abergavenny, and in full view of the Holy Mountain, the Little Skirrid, the Sugar Loaf, and many other peaks of the Black Mountain range. The new schools are being erected to supply a want long felt, and, as the inhabitants of the district have not deemed it advisable to place themselves under the governance of the School Board, private subscription was the only means by which the scheme could be carried out, and it is chiefly, if not entirely, due to the late Mr. Crawshay Bailey that the erection of new school buildings has become practicable. The school is being built upon a portion of the glebe land, from the designs of Mr. J. Neville, architect, Abergavenny, and Mr. Foster, of Abergavenny, has undertaken the contract for the sum of 318*l.* The building will be of native stone, which is very durable, and the main school-room will be 30 ft. in length, by 17 ft. in width, whilst the adjoining class-room will measure 14 ft. by 12 ft. Accommodation will be afforded for 84 children, allowing 8 ft. space for each child. Registers of a new kind, invented by the architect a short time ago, and adapted to unions and sick-wards, will be introduced. Provision has been made in the plans for the addition of a master's house at some future time.

Books Received.

Practical Geometry for the Architect, Engineer, Surveyor, and Mechanic. By E. WYNDHAM TARN, M.A., Architect. London: Lockwood & Co. 1871.

THIS is a work of remarkable merit in its class, and will be found of real use by those to whom it is addressed. The rules laid down are simplified, and they are fully illustrated by 164 wood engravings. We should have been glad to find a separate chapter on the theory of domes, concerning which Mr. Tarn has elsewhere shown himself well informed.

The Monumental Inscriptions of Middlesex. With Biographical Notices and Descriptions of Armorial Bearings. Vol. II. By FREDERICK TEAGUE CANSICK. London: J. R. Smith, Soho-square. 1872.

IN this second volume of a work, the first volume of which has already been favourably noticed in the *Builder*, the collection of epitaphs, copied from the existing monuments of distinguished and noted characters in the cemeteries and churches of Saint Pancras, Middlesex, is completed; and although not so curious and interesting as a whole, probably, as the first volume, the record of them will become more valuable as time runs on. Mr. Cansick, we believe, contemplates the publication of other volumes of a similar kind as to city churches and churchyards.

VARIORUM.

IN English Exhibitions sufficient attention has not been paid to mining and metallurgy, their processes and products. The *Mining Magazine* has the following remarks on the subject:—"What is wanted is a more correct classification, coupled with a more complete organisation. When it comes to the turn of mining and metallurgy in the Annual Exhibitions at South Kensington, it is to be hoped the classification of 1862, the best we have yet had, will be followed, with the improvements that experience cannot fail to have suggested to those intrusted with the arrangements of the class or classes. We should like to see, in order of their localities, and in connexion with similar products of other countries, a complete assortment,—first, of the various ores precisely in the state in which they are found; secondly, of the ores in the various stages of dressing; next, as they assume a defined shape as metals; and fourthly, as they are applied in the primary stages of manufacture. We would suggest as a model of what we mean the arrangement of woods shown in the Colonial Department in 1862, than which nothing could well have been more perfect.——Speaking of glass for horticultural purposes, the *Gardener's Magazine* remarks,—

"The selection of glass for horticultural purposes receives far less attention than the case demands, especially in gardens where glass is largely employed. It is not an uncommon thing to see the leaves of plants blotched and spotted, sometimes pierced with holes, in consequence

of inequalities in the texture of the glass, and the consequent focussing of the sun's rays upon them, the specks and bubbles in the glass constituting so many little 'burning-glasses.' In other cases we see plants drawn and of a sickly colour through deficiency of light, and when this occurs the production of flowers and fruit is reduced considerably below the degree of possibility, for light is the grand agent in the promotion of a healthy development of all vegetable tissues and secretions. There is much bad glass in the market, and it meets with a ready sale because of its apparent cheapness; but in no department of horticulture is it of more importance to secure a good article, and that which commands a comparatively high price is usually the cheapest in the end. . . . . The best glass for ordinary purposes is 21-ounce sheet. It is usually of good quality; but, as above remarked, there are bad samples in the market. In making a purchase of glass, the buyer should see that it is free from specks and bubbles, and the examination of a few sheets will suffice to determine the character of the whole. To be lured by mere cheapness is to jeopardise the prospects of the gardener, and low-priced Belgian glass should always be purchased with caution. An even texture is of the utmost importance, and fortunately a person who has had but little experience in the purchase of glass may very quickly determine if a sample is faulty; for, in truth, the faults cannot be hidden, and, to quote the elder Mathews, when he looked through a hole in the frying-pan on the stage, we may, if we buy rubbish, easily 'see through our folly.'"

Miscellanea.

Dover.—Building operations at Dover Castle have been enlivened by the frequent discovery of human skeletons. Recently a skeleton was found by the workmen in the course of their excavations for the battery in front of the military hospital; and another has been dug up at the south side of the Pharos. It was lying in a horizontal position, with the fleshless hands crossed over the bony framework of the breast. The arches in the Pharos, blocked up in the time of the Duke of Wellington, are now being again exposed to the light of day. Lieutenant Peck, R.E., has charge of the restoration, in the course of which it was seen that the Pharos goes down into the earth about 6 ft., and is built on a bed of clay, free from grit or foreign matter of any kind. During the excavations a stone was found bearing the inscription, "St. Radigund's." Public attention at Deal is engrossed with the subject of the proposed tramway from Ramsgate, through Deal, to Dover, all the towns giving their approval, the opposition that has been encountered being from the country gentlemen and farmers. Irritation is felt that, as upwards of 70,000 persons have signified their desire for this method of communication (notably between Deal and Dover), there should be any difficulty placed in the way by those to whom a tramway is no desideratum.

Processes for Ornamenting Glass are given in the *Zeitschrift für Farberei*, No. 20, [illegible]1, by F. Springmühl. Bleached shellac is 187[illegible]d by alcoholic solutions of any of the coloure[illegible]urs; this is spread upon glass or mica aniline col[illegible] been warmed. Gun-cotton, dis- after they ha[illegible], when coloured with any of the solved [illegible]yes, forms beautifully-tinted films. This coloured collodion can be cut into any pattern, and the film attached to any transparent surface. These processes remind us of those suggested in the *Builder* many years ago. One of these was the conversion of glass itself into iridescent films by blowing, and then laying them on the back of thin sheets of heated copper or other metal previously gilt, and ornamentally perforated (or it might be by laying the films on heated ground glass itself, of gold or other colour, after being perforated); so that the iridescent films should shine through the perforations if the whole could be annealed or gradually cooled, so as to retain the film entire. Such experiments, as we stated, had been suggested by partially successful ones with perforated cards and shell-lac varnish films cast upon water, and lifted upon the backs of the perforated cards. Perhaps the gun-cotton or collodion might be of use in thus imitating gems in cheap ornamentation, by causing films to shine through perforated cards or thin metallic plates.

A New Public Hall for Penge.—A substantial public hall has just been erected and opened at Penge: it is intended to be used for meetings, lectures, concerts, and other entertainments. The building was opened last week, when the Crystal Palace Lodge of the improved order of modern Templars held a tea meeting, at which a company of 220 were present. Afterwards a public meeting, presided over by Mr. J. Broomhall, of Penge, was held in the hall.

Bromley Local Board.—Mr. Hugh S. Cregeen has been appointed surveyor to the Bromley Local Board.

The Artesian Well in Boston, U.S.—The work of boring this well was begun in the latter part of the month of March, 1871, and has been going steadily forward up to the present time, the progress made being from 1 ft. to 15 ft. each day, at a cost of 15 dols. per foot. The well had reached a depth of 1,000 ft. when we last heard of it. When the work was first commenced, a drill would last thirty-six hours without sharpening; now the same kind of drill will only last one hour. The diameter of the bore is 5 in.; the drill is 4 in. across. The drill and iron shafting which connects it weigh now 1,200 lb., and the rope by which it is lowered weighs 900 lb. The power is furnished by a 16-in. horse-power engine, with a walking-beam of 36-in. stroke, at the rate of about thirty strokes per minute. It is said to be the intention of the company to keep the drill at work until they obtain a sufficient volume of water for their use, unless their money gives out, or the drill goes through on the other side.

Midland Steam Boiler Inspection and Insurance Company.—The chief engineer's report for 1871, to the twentieth half-yearly meeting has been printed. The explosions of 1871, it states, do not point to any particular form of boiler as being especially dangerous, as nearly all those commonly in use can be made equally safe with proper care, and most of those often deemed of weak shape had worked safely twenty or thirty years, and had exploded from evils to which all are liable. The experience of the year shows the need of greater care in construction, to provide proper stays to ends, the want of stronger guards to manholes to prevent the edge of the plate cracking with the extra strain upon it, and the necessity of hoops or other means of strengthening weak internally fired tubes, and the greater care in executing repairs, so as to restore the strength, and with sound work to prevent the leakage from corrosion so often found in boilers repaired with rough screw-patches. There has been a considerable increase in the examinations of boilers and flues by this company's officers.

Boiler Explosions.—The report of the chief engineer of the National Boiler Insurance Company for the past year has been issued in a printed form at Manchester. It states that, although the explosions reported in 1871 were numerous, their total was below the average of recent years. The reporter had information of 43 serious explosions, which caused the deaths of 49 persons and serious injury to 103 others: total, 152 persons killed or injured. Since the commencement of the Company's operations in July, 1864, no less than 419 serious explosions of steam-boilers had occurred in the United Kingdom, causing 542 deaths, and, in addition, 860 persons were seriously injured. None of the boilers which exploded during the past year were under the inspection of the Company. The number of boilers under their care, and insured with them, has greatly increased; the accidents to them had not been many; and none of them were accompanied by serious results. The report is instructive as regards the kinds of boilers liable to explosion, and the more immediate causes of accident and means of prevention.

Iron and Steel Institute.—The third and final meeting of this society for the present season has been held at Willis's Rooms, St. James's, Mr. Bessemer in the chair. There was a large attendance of gentlemen interested in the iron trade, and several machines for improving the manufacture of iron were exhibited. The Chairman opened the proceedings by inviting a discussion on the papers which were read at Wednesday's meeting. A discussion then ensued of a technical character, and a variety of opinions were given as to the value of silicon and phosphorus in the manufacture of iron. Mr. Bessemer at the close said he believed they had inaugurated an institution which would, from year to year, be making its way before the world; and that it would cull from various sources an amount of information on specific subjects which would be interesting to them.

The Destruction of the Academy at Dusseldorf.—The *Cologne Gazette* gives particulars relative to the burning of the Academy of Dusseldorf:—Several studios of living painters were wholly destroyed, with all their contents; one large painting being an altar-piece by Andre-Müller, on which he had been at work for four years, and which was nearly finished. All the archives, records, engravings, plates, pictures, &c., of the Westphalian-Rhenish Club are lost.

Copying Drawings by Electricity.—A method of rapidly copying drawings or engravings is suggested by M. Chanderay, who uses the induction coil for this purpose. The method adopted by draughtsmen consists in puncturing holes through the design, and thus obtaining an outline, which is subsequently transferred by sifting plumbago or other powder through the holes,—a very laborious task where the drawing is large or has much detail. In the plan proposed, a table covered with tin foil is connected with the negative pole of the inductorium, and on it are placed as many sheets of paper as the spark will penetrate. A metal bar, insulated with gutta-percha, serves as the positive pole, and as a pencil for copying the tracings. This point is moved about on the outline of the engraving, and sparks pass through the paper to the tin sheet underlying it every time connexion is made, puncturing four holes through the tissue at each passage. It is said that but little skill is required to guide the pencil, as the ink tracings, being good conductors, carry the pencil easily along.

The Polytechnic Exhibition at Moscow. The Vienna correspondent of the *Eastern Budget*, says:—"A Vienna paper warns the manufacturers of the empire against taking part in the Polytechnic Exhibition which is to be opened at Moscow in May, on the ground that the chief object of this Exhibition will probably be political, not industrial. There is reason to believe that this will only be a second edition of the famous ethnographical congress. It appears from the private accounts which arrive here from Moscow, that neither the space which is to be allotted to foreign exhibitors, nor the arrangement of subjects, can give the proposed Exhibition any claims to the appellation of 'international.' Industrial interests, it is said, are only so far considered as they may affect Russian manufacturers, and even the Government attaches but little value to the Exhibition as such. The committee has announced to the promoters of the Exhibition, that deputations would come to Moscow from all the Slavonic nations.

The Judge and the Carpenter.—The *Dorset Chronicle* reports that during the progress of the assize business in Dorchester, Mr. Baron Bramwell was repeatedly interrupted by the noise of a chisel and hammer. The judge despatched a request that the work should be put off, but he had again and again to inquire, "Who's that knocking?" which was loud and incessant. The answer to the third inquiry was that the industrious carpenter did not see the force of obeying the judge, and had put the query, "Who's to pay me my day's wages, I should like to know?" The learned baron, vexed apparently at the man's persistent knocking, but amused at his impudence, said, "Go and tell him to come and show cause why he shall not be fined 50*l*. for contempt of court!" No longer were law and justice impeded, or the dignity of "my lord judge" slighted by "that knocking" within the precincts of the court. Nevertheless it was hard upon the poor carpenter.

Telegraphic Progress.—A novel and successful experiment in telegraphic reporting was made in connexion with the Oxford and Cambridge Boat-race. In order to transmit a description of the race, as it was rowed, arrangements were made by the proprietors of the *Central News* to pay out a cable from one of the steamers which follow the racing-boats. There is no novelty in telegraphing through cables as they are being payed out, but there is no precedent for performing such a work at the pace of racing-boats. The leading facts connected with the race, including the varying positions of crews, and the times at which they reached well-known points, were telegraphed before the race was concluded. By this means the *Central News* was enabled to transmit throughout the kingdom, and to place before readers hundreds of miles distant, more information respecting the race than was known to the spectators on the banks of the Thames.

Fish Torpedoes.—A number of workmen in Woolwich laboratory, it is whispered, are specially employed in the manufacture of "fish torpedoes," machines of iron, in shapes somewhat like a fish, about 5 ft. long and 1 ft. in thickness, each containing a little engine worked by compressed air, capable of propelling the torpedo a considerable distance under water with wonderful accuracy. When it strikes the hull of a hostile ship it explodes with fearful force.

Model Dwellings for Boston, U.S.—The first annual report of the Boston Co-operative Building Company has been printed (Deland, printer, Boston). The directors have purchased ground, and are now erecting ten small houses in a block. The general plan is, that each floor should be so arranged as to accommodate one family only; and thus, though the entrance and the stairway will be in common, there being only one set of occupants on each floor, a tolerable degree of privacy will be secured. Each apartment will be furnished with water and gas, and will be thoroughly airy and comfortable. There being, however, great need of dwellings for single persons, or for families of two members only, it has been arranged that some floors shall be subdivided, giving the front to one person or family; the back to another. Meantime, buildings already in existence are being remodelled, and the Company are proceeding hopefully with their good work. They desire to extend the capital already in hand.

Preservation of the Hackney Commons.—The Metropolitan Board of Works have determined to take under their control, for the preservation and recreation of the public, the collection of open spaces known as the Hackney Commons. Under this general name are included London Fields, Hackney Downs, Hackney Common, North Mill Field, South Mill Field, Stoke Newington Common, and Clapton Common, with pieces of waste land, near Dalston-lane, and Grove-street, all situated to the north of Victoria Park. A scheme for the local management of these places, and their preservation, in the interests of the public, has been prepared by the Board of Works, and certified by the Enclosure Commissioners, under the provisions of the Metropolitan Commons Act. This step on the part of the Board of Works will effectually prevent all future attempts to build on the Commons.

Chicago requires Self-help.—A Chicago paper has let the world into the secret that, although contributions in aid of the ruined and destitute people of that city were sought all over the world, the part of the city which remained unburnt has done literally nothing for the relief of its starving neighbours. In the same way, from a Chicago letter in the *New York Times*, we learn that the luxury and extravagance of the place are greater and more ostentatious than ever. There are, it seems, 2,000 saloons,—1,987 being known to the police,—where drinking and gambling on an extensive scale are carried on. There are five theatres; and a new Opera-house, to cost 400,000 dollars, is projected. The writer of the letter goes on to say,—"The support of 2,000 saloons at 5,000 dollars only, costs 10,000,000 dollars a year, and this is a mere bagatelle even for burned-out Chicago."

Poplar New Town Hall.—At the last meeting of the trustees of the parish of Poplar, a report from the committee of Accounts on the completion of the new town-hall and parochial offices, was read and unanimously adopted. The committee said in conclusion,—"Your committee also feel much indebted to Messrs. Harston, the architects, for the attentive manner in which they have watched over the interests of the trustees, and recommend that a letter be written to Messrs. Harston, expressing the thanks of the trustees for the careful consideration which they have given to the directions of the committee, and for having designed a building so creditable to the parish. Your committee further recommend that a letter be written to Mr. Adin Sheffield, testifying your appreciation of the manner in which he had carried out his contracts."

Kimberley v. Dick.—The Master of the Rolls has made the following order:—

"The plaintiff to give to the person in charge of the house two clear days' notice of an intention to visit the mansion. The visit to be from 10 a.m. to 4 p.m. in each day. No locking of doors; free access to every room to be given to the plaintiff, his surveyors, and workmen. The plaintiff undertaking on behalf of himself, his surveyors, and workmen, to do all in their power to avoid giving any inconvenience or annoyance to any person residing in the house at the time and to be answerable for all damage done to the house or to any of the furniture or ornaments therein, and the defendant to pay the costs incurred by the ineffectual visit to Humewood, and also the costs incurred of the last motion and of this motion."

Private Views.—The private view of the exhibition of pictures by artists of the Continental School, will take place at the French Gallery, on Saturday, the 30th of March; that of the Institute of Painters in Water-Colours on Saturday, April 20th.

Further Addition to St. Luke's Workhouse.—Although recently enlarged, St. Luke's Workhouse has been found too small for the requirements of the Union. No estimate, says the *Clerkenwell News*, has yet been furnished of the cost of the proposed enlargement, but the contemplated outlay so alarmed Mr. Eustace, that he expressed his belief that before long the burdens of taxation would bring down many ratepayers to the position of paupers. In view of such a contingency, Mr. Mathews thought it would be desirable to make the workhouse as comfortable as possible, and the Board generally appeared to agree with him, for they adopted the report of the committee, recommending the erection of new buildings.

Consecration of Corbridge Cemetery.—Two acres of ground, situated on the south side of the River Tyne, on the road between Corbridge and Dilston, were purchased by the Local Burial Board, who borrowed 1,500*l.* to meet the cost of purchasing the ground, and erecting two chapels, a cottage for the keeper, and walling in the ground. Mr. J. J. Lish, of Newcastle, was appointed architect, and he designed the two chapels, one for members of the Church of England, and the other for Nonconformists. The style of architecture is Gothic of the Early English period. The cemetery is divided into two equal portions, one-half for members of the Church of England, and the other half for Nonconformists. The Church of England portion has been consecrated by the Bishop of Durham.

Sea Water Utilised.—Something novel in the way of sanitary improvement has been undertaken by the Borough of Tynemouth Corporation. Mr. Adams, contractor, Darlington, is making a reservoir in a field in Hawkey's-lane, near the former town, 49 ft. square, 6 ft. deep, and to hold 52,000 gallons of sea water, which the corporation intend to supply from a pumping station on the Low Light Shore. There will be two services of pipes, and it is anticipated that Turkish and public baths will be supplied with salt water. The water, however, will be principally used for flushing the sewers, watering the streets, extinguishing fires, and general sanitary purposes. Private houses and hotels, no doubt, in the line with the pipes, will be able to contract for a supply of salt water for baths.

Curious Facts in the Wood Trade.—Among other trade circulars to hand is "Edward Chaloner's Wood Circular." From it we learn that Mr. Chaloner, whose name and character are well known, has been a broker for *fifty* years. Also, that in the last week of February last, 1,890 tons weight of mahogany, cedar, lancewood, lignum vitæ, and teak, were sold by auction in Liverpool among 90 actual buyers, of whom 68 were non-residents, and who in the aggregate travelled 13,600 miles journeying to and from the auction. Further on, Mr. Chaloner says, "The highest price ever paid for mahogany was paid at this sale by Messrs. T. Mills & Co., cabinet-makers, of Bradford—viz., 29s. a foot, a London buyer being the previous bidder."

Surveyor's Services in Islington New Workhouse Arbitration.—At a recent meeting of the Islington Board of Guardians, the clerk read a letter from Mr. Sparling, the solicitor to the Board, certifying that the claim of Mr. Gritton, surveyor, for 498*l.* 16s. 3d., for services rendered in connexion with the recent arbitration in the matter of the guardians and the contractors for the new workhouse, was correct. Mr. Hillman said the guardians had lost nearly 2,000*l.* by accepting the contract of Messrs. Nutt. Mr. King said he was of a contrary opinion. He believed Messrs. Nutt had lost largely by the contract, and the Board had enjoyed the full benefit. The account was ordered to be paid.

An Amphibious Circus.—There is at Ruhrort, in Prussia, a circus of remarkable construction, although the kind appears to be not uncommon in the United States. It is an immense float, or boat, 300 ft. long, and nearly 80 ft. broad, built in sections, and made to contain 2,500 spectators, when put together. It has on board lodgings for the company, stables for twenty-five horses, a restaurant, gasometer, printing-office, and two steam fire-engines. It is now going down the Rhine, giving performances at the towns on the banks.

London Institution, Finsbury-circus.—Interesting lectures are given here on Thursday evenings. On the 21st, the subject was "How Plants are fertilised," by Mr. A. W. Bennett.

The Tunbridge Wells Cottage Improvement Company.—The report of the last year states that by a liberal and judicious expenditure on their old cottages, they have now been made into decent and respectable residences, which are let at moderate rents paid regularly. This is the work which the directors desire to proceed with as opportunities occur for making fresh purchases; but, without increased capital, it must soon come to a stand-still. Purchases have been made during the past year. Notwithstanding drawbacks, they recommend a dividend of 4 per cent. on the paid-up capital of 2,640*l.*, and leave 32*l.* to be carried to next year's accounts.

The Sewage Question at Ware.—The Ware Board of Health having petitioned the Local Government Board for an extension of time to provide means for preventing the flow of sewage or other offensive matter from their district into the River Lea (further time having been refused by the Lea Conservancy Board), in pursuance of this petition Mr. Robert Morgan, the inspector appointed for the purpose, has held an inquiry as to the subject matter of the petition at the offices of the Ware Local Board of Health. The evidence taken by the inspector will be laid before the Local Government Board, after which the Board of Health will be informed whether their petition for an extension of time is granted or not.

The Fires Bill.—Colonel Hogg, M.P., intends to move in committee on the Fires Bill the insertion of the following clause:—"Inquiries respecting fires under this Act shall be held by the police magistrates within the metropolis, and by such one of those magistrates as acts within that part of the metropolis to which the inquiry relates, and elsewhere by the justices or the stipendary magistrate acting within the division or place where a fire has occurred, and an inquiry under this Act is to be held."

Street Improvements in Blackfriars.—Amongst the improvements noticeable in the vicinity of the new railway station which is now being proceeded with at Blackfriars, at the west end of Southwark-street, is the opening out of a broad thoroughfare leading from Southwark-street to Bankside. The demolition of a number of small and dilapidated-looking property has been a decided gain in appearance. A broad street has been made, which is laid in asphalte by the Limmer Company.

St. Paul's Cathedral.—The choir of St. Lawrence, Jewry, and other friends have subscribed to present to St. Paul's two handsome cruets for the wine and water, which will, we believe, be used for the first time on Easter-day. They stand 9¾ in. high. The bowl is of crystal, and the mounts are gilt silver. The foot, neck, and cover are chased in relief, and they correspond with the alms-dish lately presented. They have been designed and executed by Messrs. Lias & Son, of Salisbury-court.

Cost of Illuminating a Church Clock.—A committee appointed to inquire as to the cost of illuminating the dials of Limehouse Parish Church have reported that the entire cost of illuminating the dials, gasfittings, and other works to complete the same, will not exceed 400*l.*, and that the cost of lighting and annual maintenance of the same will not exceed 60*l.* The dial is 188 ft. from the ground, and 12 ft. in diameter: it is visible on the Thames. The work is to be done.

Theatres.—It is proposed to erect a new theatre in Edinburgh, on the south side of the town. The project is to be on the joint-stock company principle, and is being got up by the friends of the lessee of the Royal Princess Theatre, Mr. M'Neil. One of the sites that has been mentioned is Nicholson-square Gardens, nearly opposite the Princess Theatre, for which the owner asks 6,000*l.*

The Wellington Monument.—In reply to a question from Mr. Goldsmid, the Chancellor of the Exchequer said he had every reason to believe that this monument would be completed within the contract time, although at present the sculptor was ill. The progress made thus far was rather architectural than sculptural.

Plans for the Portsmouth School Board. Designs, prepared by Messrs. Alexander & Henman, of Stockton and Middlesbrough, architects, have been selected, second in order of merit, from among forty sets submitted in competition for schools for the Portsmouth School Board.

The City Sewers.—The reports, as to the interception of the sewage of the City from the Thames, by Mr. Bazalgette and Mr. Haywood, and report, with return from the City Sewers Commission to the Court of Common Council on the main drainage rate paid, and the other charges of the Metropolitan Board, have been issued by the City Sewers Commission in a printed form.

Asphalte Paving in the City.—It has been further resolved that the footways in King William-street be paved with asphalte, and that that portion of the footway of King William-street between Lombard-street and Cannon-street be paved with Barnett's asphalte, at 4s. 6d. per square yard, he undertaking to keep it in repair for ten years without further change.

Varnish.—To Varnish Beech.—It is a poor-looking wood, with little curl or figure: therefore stain with the following:—Burnt umber and soap lees, and if any knots, give an extra touch or brush; let it stand to dry; the day following size it over twice; and the next day, varnish it: use the best varnish.—G. Y.

Land in London.—Mr. Richard Tress, architect, has taken a lease for eighty years of all that angle at the north-east end of the Holborn Viaduct having a frontage to the Viaduct itself, a rounded frontage towards St. Sepulchre's Church, and about 200 ft. frontage on Snow-hill, for which he is to pay 1,725*l.* per annum. The quantity is said to be about a quarter of an acre.

The Literary Fund Dinner.—The dinner of this corporation, to be held in St. James's Hall on the 8th of May, under the chairmanship of H.M. the King of the Belgians, promises to be a brilliant affair. The list of stewards, not yet published, but already numbering 201 names, is a remarkable document.

Holbein Pictures. — The Burlington Club intend to hold an exhibition of pictures and drawings by Holbein in the house of the Club, and to open the same at the end of April next. This exhibition will include pictures and drawings from Windsor Castle and other Royal palaces.

The Agricultural Labourers' Strike.—The agitation amongst agricultural labourers has extended to the counties of Buckingham and Northampton. Meetings have been held at various places to consider the question, and it has been agreed to ask an advance of wages.

Visitors at South Kensington.—The number during the week ending March 16th was 33,019, against an average of corresponding week in former years of 12,742. This serves to show the interest excited by the Duke of Edinburgh's collection.

Tunstall.—The memorial-stones of a new Wesleyan chapel and schools, in Cartlidge-street, Sandyford, have been laid. The cost of the edifice will be nearly 700*l.* It will be a plain brick building, 36 ft. by 45 ft., and will accommodate about 250 persons. One portion will be partitioned for school purposes, and the partition will be capable of being withdrawn, so that the old building can be used when required for divine service. The architect is Mr. R. Dain, of Burslem; and the builder, Hr. Joseph Lunt, of Tunstall.

TENDERS

For Messrs. Cook's new premises, Ludgate-circus, Fleet-street. Mr. H. Gundry, architect. Quantities supplied:—

Kelly, Brothers	£20,053	0	0
Manley & Rogers	18,350	0	0
Conder	18,120	0	0
Foster	17,377	0	0
Adamson	17,090	0	0
Henshaw	16,672	0	0
Perry & Co.	16,558	0	0
Hill, Keddell, & Waldram	15,897	0	0
Elkington	15,260	0	0

For the erection of twenty-three cottages and reading-room, &c. at Wonersh, Surrey, for Mr. Edwin Ellis. Mr. Henry Peak, architect. Quantities supplied:—

T. & J. Loe	£4,330	0	0
Pink	4,197	0	0
Garnett	3,706	0	0
Pollard & Son	3,640	0	0
Moon	3,618	0	0
Strudwick	3,609	0	0
Mason	3,600	10	0
Ambrose	3,542	15	0
C. & H. Brown	3,467	0	0
E. Mitchell	3,428	0	0
John Mitchell (accepted)	3,404	0	0
Sturdy	3,350	0	0
Wells	3,333	0	0
Burdett	3,175	10	6

For alterations and additions to house and premises No. 205, Western-road, Brighton, office of *The Brighton Times*. Mr. John Hill, architect. Quantities not supplied:—

Lockyer	£200	0	0
Kemp	190	0	0
Patching	176	0	0
Barnes (accepted)	166	10	0

For new warerooms and alterations at the rear of 23, High-street, Guildford. Mr. Henry Peak, architect:—

Garnett	£423	0	0
Burdett	422	2	1
Loe	410	0	0
Pollard & Son	344	10	0
Mason	338	0	0
Strudwick (accepted)	333	0	0

For party-walls and stone pilasters for proposed extension of front shops to thirty-nine houses in Edgware-road, for Lord Portman. Mr. R. Hesketh, architect. Quantities supplied by Messrs. Franklin & Andrews:—

Hill & Sons	£2,878	0	0
Ebbs & Sons	2,784	0	0
Philips & Son	2,754	0	0
Bird	2,680	0	0
Harris & Sons	2,530	0	0
Simpson & Son	2,529	0	0
Longmire & Burge	2,497	0	0
Browne & Robinson	2,487	0	0

For the erection of a new sacristy, west porch, and reseating, and other works at the parish church, Folkestone. Mr. S. Slingsby-Stallwood, architect:—

				Extra for tile instead of stone paving.			Allowed for old materials.		
Dunk	£1,008	0	0	£84	0	0	£36	0	0
Brooks & Co.	995	3	0	81	0	0	25	3	0
Webster	979	2	10	102	6	6	31	0	0
Holdom	930	19	0	78	2	6	11	0	0
Bowley (accepted)	860	10	0	42	0	0	35	10	0

For the erection of hall and premises at Market Harbro', Leicestershire, for the Institute Company (Limited). Mr. Charles Bell, architect. Quantities supplied by Messrs. H. Lovegrove and W. H. Barber:—

Mason	£1,957	0	0
Mattock	1,940	0	0
Loveday	1,899	9	0
Palmer & Son	1,872	0	0
Northam	1,756	15	0
Barlow & Peach (accepted)	1,495	0	0

For building casual wards, stable and coach-house, and other works, at the workhouse, Bridge Union, Canterbury. Mr. B. Adkins, architect. Quantities supplied:—

Featherstone	£2,202	18	0
Gaskin & Godden	2,175	0	0
Stephenson	2,157	0	0
Stiff	2,049	0	0
Epps	2,047	0	0
Richardson	2,042	0	0
Harnett	2,040	0	0
Wilson	2,028	15	0
Bourne	1,987	10	0
Toad (accepted)	1,925	0	0
Judges	1,897	0	0
Woodcock	1,837	0	0

For erecting two new chapels, one entrance-lodge, mortuary, and front boundary-wall, to the proposed new burial-ground in Hither-green-lane, Lewisham, Kent. Mr. F. F. Thorne, architect. Quantities supplied by Messrs. Osborne & Russell:—

Kirk	£8,395	0	0
Henshaw	8,213	0	0
Lord	7,980	0	0
Staines	7,896	0	0
Sabey	7,796	0	0
Leatherdale (accepted)	7,685	0	0

For the erection of casual paupers' wards, tailors' shop, &c. at the Chesterfield Union Workhouse, for the Board of Guardians. Mr. S. Rollinson, architect:—

Masons', Bricklayers', Slaters', Plasterers', Smiths', and Founders' Departments.

Wright	£1,045	0	0
Forrest	1,015	0	0
Marsh	993	14	8
Walters	974	19	9
Maw (accepted)	898	11	10

Carpenters', Joiners', Plumbers' Glaziers', and Painters' Departments.

Glossop	£650	0	0
Marsden	648	0	0
Bromehead, Brothers	630	10	0
Madin	605	2	0
Horle & Handly (accepted)	593	14	0
Heath	585	0	0

For the erection of workshops and offices, for Mr. Bell, at Chelsea, including boundary-wall for Chelsea Vestry Hall. Mr. F. A. Dovey, architect. Quantities supplied:—

Myers & Sons	£2,130	0	0
Scrivener & White	1,999	0	0
Manley & Rogers	1,957	0	0
Kelly, Brothers	1,885	0	0
Temple & Forster	1,880	0	0
Langmead & Way	1,837	0	0

For stabling to Windsor House, Hampstead, for Dr. Cooper Rose. Mr. N. T. Randall, architect:—

	Stabling.			Deduct if zinc roof in lieu of lead.		
Faulkner	£550	0	0	£48	0	0
Minchin	548	0	0	48	0	0
Watts	533	0	0	47	0	0

For the completion of Holloway Hall, N. (second contract). Mr. George Truefitt, architect:—

Eanor (accepted)	£1,922	0	0

For Wesleyan Chapel, at Penrith, Cumberland. Mr. G. Woodhouse, architect:—

Masons' Work Only.

Slee	£2,182	0	0
Little	2,146	0	0
Grisenthwaite	1,831	0	0
Dixon, Brothers (accepted)	1,638	0	0
Hope & Co.	1,627	0	0

Joiners' Work Only.

Cowper	£2,136	18	6
Pollock	1,756	14	3
Richardson (accepted)	1,713	13	0

Slater.

J. Bailey	£200	0	0
G. Bailey	199	0	0
Grisenthwaite	183	0	0
Barton (accepted)	181	0	0

Plumbers', Plasterers', Glaziers', and Painters'.

Scott	£583	0	0
Porter (accepted)	493	0	0
Jackson	533	0	0

For making additions to the parochial schools, Teynham, Sittingbourne. Mr. B. Adkins, architect:—

George	£590	8	0
Ratcliffe & Johnson	589	4	6
Judges (accepted)	517	0	0

For new Baptist Chapel, at West Croydon, for Rev. J. A. Spurgeon. Mr. J. T. Barker, architect. Quantities by Mr. D. J. Brown:—

Spearing	£9,100	0	0
Carter	7,760	0	0
Dove, Brothers	7,755	0	0
Hart	7,680	0	0
Nightingale	7,676	0	0
Staines & Son	7,596	0	0
Wood	7,550	0	0
Wright, Brothers, & Goodchild	7,500	0	0
Holledge	6,900	0	0
Waterson	6,590	0	0
Pollard	5,839	0	0

For Catholic poor schools, Brent's-court, Borough. Quantities by Mr. Gandy. Mr. E. Ingress Bell, architect:—

		Credit for old materials.	
Robbins	£3,959	£50	£3,909
Rider	3,648	78	3,570
Dove, Brothers	—	—	3,495
Bullivant	3,483	115	3,368
Henshaw & Co.	3,240	50	3,190
Sharpington & Cole (accepted)	3,273	150	3,123

For alterations and additions to the City of London Schools, under the City architect:—

Browne & Robinson	£1,345	0	0
Myers & Son	1,270	0	0
Phelps	1,193	0	0
Carter & Son	1,127	0	0
Henshaw	996	0	0
Perry & Co.	987	0	0
Cook & Groom	725	0	0

For the erection of a block of warehouses in Bath-street, St. Luke's. Mr. T. J. Hill, architect. Quantities supplied by Messrs. Osborne & Russell:—

Wright, Brothers, & Goodchild	5,775	0	0
Moreland & Co.	5,5[illegible]	0	0
Timewell	5,5[illegible]	0	0
Bridgeman, Nuthall, & West	5,497	0	0
Rist & Brown	5,483	0	0
Child	5,396	0	0
Tarrant	5,283	0	0
Grover	5,185	0	0
Goodman & Poole	5,072	0	0
Linzell	5,125	0	0
Cohen	5,900	0	0
Bayes & Rammage	4,998	0	0
Crabb	4,950	0	0
Perry & Co.	4,944	0	0
Brown & Sons	4,929	0	0
Turner & Sons	4,871	0	0
Sabey & Co.	4,700	0	0
Leatherdale	4,664	0	0
Langan	4,654	0	0
Garrud	4,474	0	0
Stephenson	4,291	0	0
Cook & Groome	4,200	0	0

Tenders for Work at National Gallery.—Mr. G. W. Booth writes,—"The amount of my tender for enlargement of National Gallery is 79,892*l.*, not '73,892*l.*' as elsewhere reported."

TO CORRESPONDENTS.

A. B. M. (north-east front shall be illustrated. Send descriptive particulars by next mail).—B. F.—L.—Dr. S.—E. P.—J. H.—W. G. S.—R. B.—R. P.—T. & C.—A. H.—L. & Sons.—H. & F.—An Eye Witness.—W. H. C.—F. A. D.—G. M.—An Old Mason.—A Master Mason.—English Marble.—W. L.—A Disgusted Pupil.—Gault.—W. P.—Nemo.—P. & Co.—A. D. (in type).—B. F. (in type).

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests of course with the authors.